SKC

SCIENCE. SERVING PEOPLE.

2024/25

INTERNATIONAL CATALOG

THE LEADER IN SAMPLING SOLUTIONS AND **EXPERTISE FOR OEHS PROFESSIONALS**

OUR GOAL IS YOUR BEST SKC EXPERIENCE

The Leader in Sampling Solutions and Expertise for OEHS Professionals
SKC is a family of dedicated people who make trusted high quality air, noise, and surface/dermal sampling solutions for OEHS professionals. What differentiates us from others in the industry is our 60+ years of experience not only in design, engineering, manufacturing, and sales, but also support of you and the equipment and media you use every day to help keep workers healthy and safe. Our science is always serving you.

EASY ORDERING AND FRIENDLY CUSTOMER SUPPORT

Call Monday-Friday, 8:30 a.m. to 5:00 p.m. ET
U.S. and GSA: 800-752-8472
International: 01-724-941-9701 or the SKC Distributor in your area

Fax: 800-752-8476 - US only

Browse: www.skcinc.com

ABOUT YOUR ORDER

We fulfill and ship most orders same day if received by 2:00 p.m. ET. Normal ground delivery is FOB shipping point.

We accept: MasterCard, VISA, American Express, DISCOVER

Government Customer? SKC offers products on GSA Contract GS-07F-038BA. Learn more at **skcinc.com/GSA**.

WE ARE ALWAYS HERE FOR YOU

Technical Support and Training: Visit our Knowledge Center at skcinc.com or e-mail questions to **skctech@skcinc.com**.

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Warranty and Repairs: SKC quality products are covered by a limited warranty. We also offer affordable repair. Learn more at **skcinc.com**.

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DIGITAL CATALOG

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A NOTE TO SKC CUSTOMERS

This is a two-year catalog. Product offerings are subject to change. Visit **www.skcinc.com** for the latest product offerings, information, and pricing.

FASTFIND

GET QUICK ONLINE PRODUCT ACCESS!

Use your mobile phone to scan QR codes throughout this catalog.

SKCINC.COM

CELEBRATING
WHAT'S NEW

AirChek ESSENTIAL+
SAMPLING PUMP

Easiest Operation and Highest Value in 5 to 5000 ml/min Sampling Pumps

Introducing the new AirChek Essential+. This powerful 5 to 5000 ml/min, long-running on/off-style sampling pump with no-tool flow rate verification gives you simplicity of operation yet the touch screen of a more advanced model. Plus, it's available with SKC's new economical Lite Charging Cradle. AirChek Essential+ is the easiest air sampling and the highest value.

- 5 to 5000 ml/min flows
- Easiest touch screen operation
- New Lite Charging Cradle
- High back pressure compensation
- Corrects flow for changes in temperature and atmospheric pressure
- 40-hour run times
- Ergonomic, lightweight, and ultra-quiet
- Intrinsically safe
- Versatility and economy for all your applications

Learn more on pages 16-17 or contact your SKC distributor.

SURFACE SWYPES/DECONtamination

Detect Hexavalent Chromium and Safely Decontaminate Surfaces

SKC Surface SWYPE Indicators for Hexavalent Chromium provide fast and safe on-the-spot detection on almost any surface — no instruments or analyses are required; just read the colorimetric result. Surface SWYPES are inexpensive, convenient, easy to use, and available for many chemical hazards. Make Surface SWYPES part of your dermal exposure reduction program.


Spray & Wipe


Detect


Decontaminate


Confirm

Learn more on pages 164 and 168 or contact your SKC distributor.

HAV-SENTRY

Personal Hand-Arm Vibration Exposure Meter

The unique, reliable HAV-Sentry System provides measurement (not estimate) and real-time alerts of hand-arm vibration exposure. Its ease of use and secure cloud-based dashboard with visualization, analysis, and reporting, make HAV-Sentry the primary tool to help you protect hand-held tool operators from developing lifelong Hand-Arm Vibration Syndrome.

- Personalized, non-intrusive monitoring
- Accelerometer and force sensor for comprehensive assessment
- Complies with BS ISO 5349 and 8041

Learn more on pages 150-151 or contact your SKC distributor.

YOU INSPIRE US TO DO OUR BEST WORK

Your important mission of protecting the health and safety of workers is the reason we work so hard to apply our science and provide you with best-in-class sampling tools.

SAMPLING SOLUTIONS

AIR

NOISE

SURFACE/ DERMAL

CUSTOMER SUPPORT WORLDWIDE

200+ **combined years of expertise**

Technical Sales Support from our team of scientists and experts

The Leader in Sampling Solutions and Expertise for OEHS Professionals

Our Science. Serving You.

SCAN ME The SKC Story

EXPERTISE

SKC Science Serving People through Training and Resources

Expertise is the foundation and heart of our solutions

SKC is dedicated to sharing its expertise to serve industrial hygiene, safety, and environmental professionals. Our goal is to help you protect the health and safety of people at work and in their communities.

Visit
WWW.SKCINC.COM
Online Expertise at your fingertips

- **TECHNICAL INFORMATION**
- **SAMPLING HELP**
- **TRAINING RESOURCES**

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LET US HELP YOU!

Look for the Resource Bars (shown at right) in this catalog to alert you to online training and resources available on **www.skcinc.com**.

V Video | P PowerPoint | W Webinar | S Sampling Solution
Visit skcinc.com

JOIN OUR ONLINE COMMUNITIES –

SKC AIR SAMPLE PUMPS

Professionals have always relied on SKC pumps for ruggedness and reliable performance. That same durability and reliability continues in our latest models that also feature ergonomic design, touch screen operation, PC compatibility, and Bluetooth connectivity. Built with the quality upon which you have always relied and backed by the expertise, service, and support you deserve — SKC air sample pumps are the clear choice for OEHS professionals.

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SKC Sample Pump Selection Guide

Choose the Features You Need, Get the Quality You Expect

Choose by Flow Range	20 to 500 ml/min	5 to 3000 ml/min			5 to 5000 ml/min			5 to 15 L/min
Choose by Compensation Range	Up to 20 inches water BP at 500 ml/min	Up to 25 inches water BP at 2 L/min	Up to 30 inches water BP at 2 L/min	Up to 20 inches water BP at 2 L/min	Up to 40 inches water BP at 2 L/min†	Up to 50 inches water BP at 2 L/min	Up to 50 inches water BP at 2 L/min	Up to 12 inches water BP at 10 L/min
Choose by Feature								
Programmable/ PC Compatible	Keypad/PC	No	Keypad/PC	No	Keypad (PCXR8)	Keypad	Touch screen*/ PC*	Keypad/PC
Listed for Intrinsic Safety	UL 913, CAN/ CSA C22.2, ATEX, IECEx, UKEX	UL 913, CAN/CSA C22.2 *(ATEX models available)*	Ex	No	UL 913, CAN/CSA C22.2 *(ATEX models available)*	UL 913, CAN/CSA C22.2	UL 913, CAN/CSA C22.2 ATEX, IECEx, UKEX**	No
Compensates for Changes in Atmospheric Pressure	Yes	No	Yes	No	No	No	Yes	Yes
Compensates for Changes in Temperature	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Battery Type	Li-Ion	NiMH	NiMH	Alkaline	NiMH	Li-Ion	Li-Ion	Li-Ion
Approximate Run Time	20+ hours at 500 ml/min	12+ hours at 2 L/min	12+ hours at 2 L/min	10+ hours at 2 L/min	12+ hours at 4 L/min	20 hours at 2 L/min	40+ hours at 2 L/min***	24+ hours at 10 L/min
	 Pocket Pump TOUCH Pages 10-11	 AirChek 52/ Sidekick Pages 12-13	 AirChek 3000 Pages 14-15	 AirLite Page 31	 Universal† Pages 22-23	 AirChek XR5000 Pages 20-21	 AirChek Essential+ AirChek Connect AirChek TOUCH Pages 16-19	 Leland Legacy Pages 24-25

* *AirChek Essential+ is a simple on/off-style touch screen pump*
** *AirChek TOUCH has UL 913 and CAN/ CSA C22.2 only*
*** *20+ hours at 2 L/min for AirChek TOUCH*
† *Flow ranges and compensation range may differ according to model.*

Air Sampling Pump Kits from SKC Inc.

With Accessories for US Methods

Don't Forget . . .

SKC Air Sampling Kits provide the pumps and accessories you need for your applications. Order the following items separately:

☑ **A flowmeter –** Select a flowmeter based on the accuracy requirements of your application. *See pages 38-41.*

☑ **Sample Media –** Base your choice of sample media on the application and the method used. Consult the SKC Air Sampling Guides for information on recommended sampling media for specific compounds. *See sampling media beginning on page 46 and Air Sampling Guides starting on page 172.*

SKC Inc. carefully designs its air sampling pump kits to meet the unique sampling requirements of individual regions. When selecting a pump kit, consider the configuration that will best fit your application. Most of the SKC Inc. pumps are available in Starter Kits with pump, tubing, and charger; single kits (one of each kit component); and 5-pack kits (5 of each kit component except the charger and the case). Kits do **not** include sample media or a flowmeter (unless otherwise noted). Kit contents can vary depending on the pump model.

Starter Kits

- Pump
- Battery charger or cradle
- Power supply
- Tubing
- Collar clip with cable tie

High Flow Sampling Kits

- Pump
- Battery charger or cradle
- Power supply
- Filter cassette holder
- Tubing
- Screwdriver set
- Soft-sided nylon carry case (single) or hard-sided case (5 pack)

Low and High Flow Sampling Kits

- Pump
- Battery charger or cradle
- Power supply
- Filter cassette holder
- Tubing
- All-in-One adjustable tube holder
- Type A tube cover
- Screwdriver set
- Soft-sided nylon carry case (single) or hard-sided case (5 pack)

Low Flow Sampling Kits

- Pump
- Battery charger or cradle
- Power supply
- Type A tube holder and cover
- Tubing
- Soft-sided nylon carry case (single) or hard-sided case (5 pack)

See specific pump pages for ordering information.

Air Sampling Pump Kits from SKC Ltd.

With Accessories for UK and EU Methods

SKC Ltd. air sampling pump kits are designed to suit your applications without a lot of extra purchases. One durable carry case houses the equipment you need for gas/vapour sampling, dust/particulate sampling, or both. A basic kit is available to which you may add equipment for specific applications. Kits are available in single and 5-pack configurations. Kits do **not** include a flowmeter or sample media. Contents of kits may vary with pump model.

Basic Air Sampling Kits

- Pump
- Battery charger or cradle and power supply
- Tubing
- Screwdriver set
- Step by Step Guide
- Durable carry case

Gas/Vapour Sampling Kits

- Pump
- Battery charger or cradle and power supply
- Tubing
- Tube breaker
- All-in-One adjustable tube holder*
- Type A protective tube cover
- Screwdriver set
- Step by Step Guide
- Durable carry case

* *Not included in Pocket Pump TOUCH Kits*

Dust/Particulate Sampling Kits

- Pump
- Battery charger or cradle and power supply
- Tubing
- IOM Sampler (plastic)
- IOM Cassettes (5, plastic)
- Calibration Adapter (Calidaptor)
- Screwdriver set
- Step by Step Guide
- Durable carry case

Combined Dust and Vapour Sampling System

- Pump
- Battery charger or cradle and power supply
- Tubing
- Tube breaker
- All-in-One adjustable tube holder
- Type A protective tube cover
- Calibration Adapter (Calidaptor)
- IOM Sampler (plastic)
- IOM Cassettes (5, plastic)
- Screwdriver set
- Step by Step Guide
- Large, durable carry case

For Pumps . . .

See specific pump pages for ordering information.

Pocket Pump® TOUCH

The Low Flow TOUCH in Air Sampling from 20 to 500 ml/min

- **Intuitive touch screen for easy programmability**
- **Constant flows from 20 to 500 ml/min**
  - Accommodates typical flow rates for sorbent tubes
- **Bluetooth® low-energy (BLE) communication**
  - With PC and DataTrac Pro Software *(requires USB Bluetooth accessory–see page 33)*
  - With iOS® and Android® tablets and phones using the SKC SmartWave app
  - Non-BLE pump models available *(visit skcinc.com)*
- **Exhaust port for direct filling of sample bags**
  - Optional quick-connect accessory for secure connection
- **Magnetic charging connector**
- **Large backlit screen displays time, date, battery status, flow rate, sample volume, inlet pressure, temperature, atmospheric pressure, remaining run time (programmed run), and elapsed run time**
- **Rubber overmolded case provides quiet operation, impact protection, and a no-slip grip**
- **Compact and only 8.3 ounces (235 grams)**
- **Designed to meet ISO 13137**
- **Multi-tube sampling**
  - Sample with up to four tubes simultaneously; saves time and uses fewer pumps *(see page 37 for accessories)*
  - Constant flow and pressure modes
- **Automatic flow fault and restart**
- **Screen auto-lock provides for secure sampling**

20+ hours run time at 500 ml/min!

Non-BLE models available

Certifications

Intrinsic safety: UL913, CAN/CSA C22.2, ATEX, IECEx, UKEX

Other: CE, UKCA

V Video | P PowerPoint | W Webinar | S Sampling Solution

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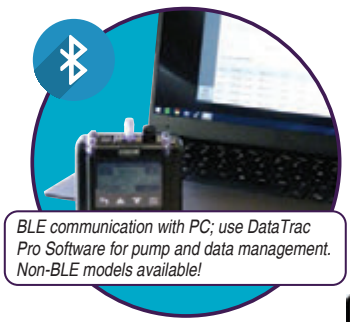

BLE communication with PC; use DataTrac Pro Software for pump and data management. Non-BLE models available!

Exhaust port with optional quick-connect accessory for secure bag sampling

SCAN ME

BLE communication with iOS and Android devices and SKC SmartWave app for pump control and monitoring

Easy flow rate verification with Low Flow chek-mate Flowmeter (see pages 38-39)

Pocket Pump **TOUCH** with Bluetooth (BLE)		SKC Inc. Cat. No.	SKC Ltd. Cat. No.
Pocket Pump TOUCH only* with Li-Ion battery and screwdriver, *requires charger; see kits or chargers below. see Tube Holder on page 36, requires 877-94 below to use Bluetooth with PC*		220-1000TC	220-1000TC
Pocket Pump TOUCH with Charger* includes pump (220-1000TC) and single charger (cable and wall cube with US plug), *see Tube Holder on page 36, requires 877-94 below to use Bluetooth with PC*	100-240 V	220-1000TC-C	
Starter Kit* includes pump and single charger (220-1000TC-C), 3 feet (0.9 meter) of Tygon tubing, and collar clip with cable tie, *see Tube Holder on page 36, requires 877-94 below to use Bluetooth with PC*	100-240 V	220-1000TC-S	
Single Pump Kit* includes pump and single charger (220-1000TC-C), and tube holder with Type A cover, in a soft-sided nylon carry case, *requires 877-94 below to use Bluetooth with PC*	100-240 V	220-1000TC-K	
Single Pump Vapour Kit includes pump (220-1000TC), single charger (UK, EU, and AU), 3 feet (0.9 meter) lengths of Tygon tubing, tube holder with Type A cover, tube breaker, mini tool kit, Basic Step by Step Guide, and carry case, *requires 877-94 below to use Bluetooth with PC*	100-240 V		220-1000TCKV
3-pack Pump Kit* includes 3 pumps (220-1000TC), 3 single chargers (cables and wall cubes with US plug), and 3 tube holders with Type A covers, in a hard-sided case, *requires 877-94 below to use Bluetooth with PC*	100-240 V	220-1000TC-K3	
5-pack Pump Kit* includes 5 pumps (220-1000TC), 5 single chargers (cables and wall cubes with US plug), and 5 tube holders with Type A covers, in a hard-sided case, *requires 877-94 below to use Bluetooth with PC*	100-240 V	220-1000TC-K5	
5-pack Deluxe Pump Kit* includes 5 each: pumps (220-1000TC), tube holders with Type A covers, single magnetic USB charging cables; one each: multi-port USB charging hub with power cable (US plug), and DataTrac Pro USB Bluetooth Adapter 877-94 (software available via free download), in a hard-sided case	100-240 V	220-1000TC-K5D	
Pocket Pump TOUCH 5-Pump Vapour Kit includes 5 each: pumps (220-1000TC), magnetic USB charging cables, tube holders with Type A covers, 3 feet (0.9 meter) lengths of Tygon tubing, and mini tool kits; one each: 5-port USB charging hub with power supply (UK, EU, and AU) and tube breaker; and 3 Basic Step by Step Guides, in a carry case, *requires 877-94 below to use Bluetooth with PC*	100-240 V		220-1000TCK5V

Accessories		Cat. No.	Qty.
Single Charger, USB, magnetic connector, supplied as cable and wall cube			
with US plug only	100-240 V	220-300	
with UK/Euro/Aus/US multi plug	100-240 V	220-300A	ea
Multi-port USB Hub with power cable, *requires charging cables available as Cat. No. P75739*		220-400	ea
Single charging cable, USB, without wall cube		P75739	ea
Replacement Li-Ion Battery Pack*		P76303	ea
Quick-connect Bag Sampling Adapter, installs on pump exhaust port for secure connection to tubing for bag sampling, accepts 1/4-inch OD PTFE tubing		220-200	ea
Single Kit Case, nylon, with shoulder strap		224-903	ea
5-pack Kit Case, hard-sided		224-915	ea
DataTrac Pro for Pocket Pump TOUCH USB Bluetooth Adapter, *required for free software download and use of DataTrac Pro Software*		877-94	ea
Low Flow chek-mate Flowmeter, 20 to 500 ml/min, includes 9-volt battery, available with NIST, UK, or ISO standard traceable calibration certificate; *see details on pages 38-39*			

* *Pocket Pump TOUCH pumps contain Li-Ion batteries and are subject to special shipping regulations.*

Pocket Pump TOUCH requires 1/4-inch ID tubing; see page 45.

AirChek 52/Sidekick

Simple. Rugged. Economical.

The small, lightweight, and economical AirChek® 52/Sidekick Sample Pump is designed for rugged industrial use at flows from 5 to 3000 ml/min. Ideal for on-worker applications, use the compact AirChek 52/Sidekick for short-term or full-shift sampling with sorbent tubes, impingers, cyclones, PPIs, or filter cassettes. Reliability, ease of use, and precision flow control make the AirChek 52/Sidekick one of the most popular personal air sample pumps in the industry.

Wide flow range
- Constant high flows from 1000 to 3000 ml/min
- Low flows from 5 to 500 ml/min with low flow holder *(see page 36)*
- Ideal for most personal sampling applications

Full-shift run times
- Provides 12+ hours run time at 2 L/min, 25 inches water back pressure

Simple design
- Impact-resistant case is easy to clean and decontaminate
- Easy on/off and flow control
- Quick-change battery pack mounted on bottom of pump

Small, compact, and lightweight
- Sidekick: 16.4 oz (465 grams)
- Sidekick with ATEX approval: 20.3 ounces (575 grams)
- AirChek 52: 20 ounces (567 grams)

Digital display*
- Digital time display tracks sample run time in minutes up to 99,999
- Indicates low battery condition or flow fault without losing sample run time
- Attempts auto-restart up to 5 times from flow fault

Multi-tube sampling saves time and uses fewer pumps
- Multiple low flow tube holder and Constant Pressure Controller (CPC) accessories allow up to four tube samples to be taken simultaneously, each at different flow rates if desired *(see page 37)*

All-in-One Adjustable Tube Holder
- Permits single sorbent tube sampling from 5 to 500 ml/min without a separate CPC *(see page 36 for details)*

* *Cat. Nos. 224-52 and 224-52MTX only*

Top view: AirChek 52/Sidekick with LCD indicator

AirChek 52/Sidekick Low Flow Sampling Accessories

Description	Voltage	AirChek 52 SKC Inc. Cat. No.	Sidekick SKC Ltd. Cat. No.
AirChek 52/Sidekick Pump with NiMH battery pack and screwdriver set, *requires charger; see kits below*		224-52	224-50MH 224-51MTX 224-52MTX
Starter Kit includes pump, single PowerFlex charger with cable, 3 feet (0.9 meter) of Tygon tubing, and collar clip with cable tie	100-240 V	224-52-S	
Single Pump Kit-Basic includes pump as described above, single charger, 39 inches (1 meter) of Tygon tubing, and 1 Step by Step Guide, in a durable carry case	100-240 V		224-50MHK 224-51MTXK 224-52MTXK
Single Pump Kit-High Flow includes pump as described above, single PowerFlex charger with cable, and filter cassette holder, in a hard-sided carry case	100-240 V	224-52KH	
Single Pump Kit-Dust includes pump as described above, single charger, calibration adapter, 39 inches (1 meter) of Tygon tubing, plastic IOM MultiDust Sampler, 5 plasic IOM MultiDust cassettes, and Step by Step Guide, in a durable carry case	100-240 V		224-50MHKP 224-51MTXKP 224-52MTXKP
Single Pump Kit-Vapour includes pump as described above, single charger, 39 inches (1 meter) of Tygon tubing, All-in-One adjustable tube holder, tube breaker, Type A protective tube cover, and 1 Step by Step Guide, in a durable carry case	100-240 V		224-50MHKV 224-51MTXKV 224-52MTXKV
Single Pump Kit-Combined Dust/Vapour includes pump as described above and all media and accessories as described in the Single Vapour and the Single Dust kits, in one durable carry case	100-240 V		224-50MHKC 224-51MTXKC 224-52MTXKC
5-pack Pump Kit-Basic includes 5 pumps as described above, 5-station charger, 5 one-meter (39-inch) lengths of Tygon tubing, and 3 Step by Step Guides, in a durable carry case	100-240 V		224-50MHK5 224-51MTXK5 224-52MTXK5
5-pack Pump Kit-High Flow includes 5 each: pumps as described above and filter cassette holders; and one 5-station PowerFlex charger with 5 cables, in a hard-sided carry case	100-240 V	224-52K5	
5-pack Pump Kit-High/Low Flow includes 5 each: pumps as described above, All-in-One adjustable tube holders, Type A protective tube covers, and filter cassette holders; and one 5-station PowerFlex charger with 5 cables, in a hard-sided carry case	100-240 V	224-52K5D	
5-pack Pump Kit-Dust includes 5 pumps as described above, 5 plastic IOM MultiDust Samplers, 5 one-meter (39-inch) lengths of Tygon tubing, calibration adapter, 15 plastic IOM MultiDust cassettes, 5-station charger, and 3 Step by Step Guides, in a durable carry case	100-240 V		224-50MHK5P 224-51MTXK5P 224-52MTXK5P
5-pack Pump Kit-Vapour includes 5 pumps as described above, 5 All-in-One adjustable tube holders, 5 Type A protective tube covers, 5 one-meter (39-inch) lengths of Tygon tubing, 5-station charger, tube breaker, and 3 Step by Step Guides, in a durable carry case	100-240 V		224-50MHK5V 224-51MTXK5V 224-52MTXK5V
5-pack Pump Kit-Combined includes 5 pumps as described above and all media and accessories as described in the 5-pack Vapour and the 5-pack Dust kits, in one durable carry case	100-240 V		224-50MHK5C 224-51MTXK5C 224-52MTXK5C

AirChek 52/Sidekick requires 1/4-inch ID tubing; see page 45.

The SKC Ltd. Sidekick Pump is available in three models: 224-50MH (non-ATEX approved, shown), 224-51MTX (ATEX approved, no LCD), and 224-52MTX (ATEX approved, with LCD indicator).

Certifications

Intrinsic safety: UL913, CAN/CSA C22.2
ATEX models available; contact SKC.

Other: CE, UKCA

For Accessories

Battery Chargers..... pages 34-35
Tube Holders ..... pages 36-37
Flowmeters ..... pages 38-41
Kit Cases..... page 44
Filter Holders..... page 114

MORE INFORMATION
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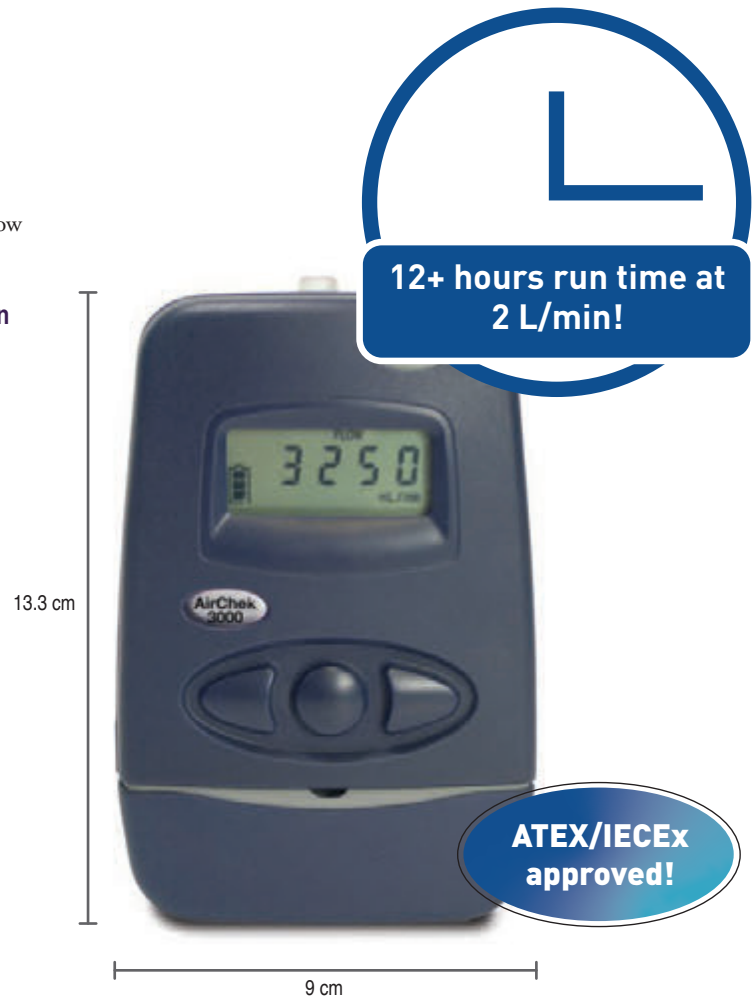
AirChek 3000

PC Programmable Air Sample Pump

- **Longer run times with NiMH battery — 12+ hours at 2 L/min, 30 inches water back pressure**
- **Advanced flow control from 1000 to 3250 ml/min**
  - Internal flow sensor ensures set flow is maintained accurately
  - Thermal and pressure sensors maintain flow by compensating for differences between the temperature and atmospheric pressure at flow rate verification and during sampling
- **Convenient Low Flow Adapter Kit available for 5 to 500 ml/min**
- **Continuous sample volume calculations**
  - Flow rate, run time, volume, and flow fault are continuously recorded for accurate sample reporting
- **Battery status display**
- **Multi-tube sampling feature**
  - Save valuable time with simultaneous 2, 3, or 4-tube sampling (*see page 37*)
- **Protective features**
  - Rugged, impact-resistant case with cover-protected ports
  - Automatic flow fault shutdown and restart
  - Auto shut-off at low battery
- **Automatic CalChek flow rate verification feature with chek-mate flowmeter** ***(see page 39)***



Schedule it on a PC!

Combine AirChek 3000, your PC, and DataTrac Software to easily create single or multiple sampling schedules that include delayed start, timed shutdown, and sequential sampling. Alternatively, a single schedule can be set manually using the pump's large integral keypad.

Sample and record it!

Start sampling with the click of a mouse or the press of a button. An internal flow sensor ensures set flow is maintained accurately. AirChek 3000 records flow rate, run time, sample volume, and flow fault throughout the sampling period. View values during sampling on the pump LCD or in pump history on a PC.

Download and report it!

Use your PC and DataTrac Software to download pump history, import data into your favorite software for IH lab reporting, or create a worker exposure profile for complete reporting. *Visit skcltd.com for details.*

Certifications

CE Ex IECEx ANZEx

Schedule, Sample, Download, and Report from Your PC

PC Programmable with DataTrac Software

Windows-based DataTrac Software provides for maximum use of pump features and sample history download to PC for reporting.

- Program/operate pump
- Download sampling history from pump to PC
- Set up easy chain of custody sample sheets
- Manage data and produce reports

See ordering below.

Description	Voltage	SKC Ltd. Cat. No.
AirChek 3000 Pump with NiMH battery pack and screwdriver kit		210-3311
Single Pump Kit-Basic includes pump (210-3311), single charger, 39 inches (1 meter) of Tygon tubing, and Step by Step Guide, in a durable carry case	100-240 V	210-3311K
Single Pump Kit-Dust includes pump (210-3311), single charger, calibration adapter, 39 inches (1 meter) of Tygon tubing, plastic IOM MultiDust Sampler, 5 plastic MultiDust cassettes, and Step by Step Guide, in a durable carry case	100-240 V	210-3311KP
Single Pump Kit-Vapour includes pump (210-3311), single charger, 39 inches (1 meter) of Tygon tubing, All-in-One adjustable tube holder, tube breaker, Type A protective tube cover, and Step by Step Guide, in a durable carry case	100-240 V	210-3311KV
Single Pump Kit-Combined includes pump (210-3311) and all media and accessories as described in the Single Vapour and the Single Dust Kits, in a durable carry case	100-240 V	210-3311KC
5-pack Pump Kit-Basic includes 5 each: pumps (210-3311), 39-inch (one-meter) lengths of Tygon tubing; one 5-station charger; and 3 Step by Step Guides, in a durable carry case	100-240 V	210-3311K5
5-pack Pump Kit-Dust includes 5 each: pumps (210-3311), plastic IOM MultiDust Samplers, 39-inch (one-meter) lengths of Tygon tubing; 15 plastic MultiDust cassettes; one 5-station charger and calibration adapter; and 3 Step by Step Guides, in a durable carry case	100-240 V	210-3311K5P
5-pack Pump Kit-Vapour includes 5 each: pumps (210-3311), All-in-One adjustable tube holders, Type A protective tube covers, and 39-inch (one-meter) lengths of Tygon tubing; one 5-station charger and tube breaker; and 3 Step by Step Guides, in a durable carry case	100-240 V	210-3311K5V
5-pack Pump Kit-Combined includes 5 pumps (210-3311) and all media and accessories as described in the 5-pack Vapour and the 5-pack Dust kits, in one durable carry case	100-240 V	210-3311K5C
Accessories		
Single Charger, with US, UK, Euro, AU, and NZ plug	100-240 V	223-260A
Five-Station Charger, with US, UK, Euro, AU, and NZ plug	100-240 V	223-109A
CalChek Communication Cable, *required for automatic flow rate verification of AirChek TOUCH, AirChek 3000, and Leland Legacy Sample Pumps with chek-mate flowmeter (see page 39)*		375-200
Low Flow Adapter Kit (5 to 500 ml/min) includes All-in-One adjustable tube holder and Type A tube cover		210-500
Medium Flow chek-mate Flowmeter, 0.5 to 5 L/min, includes 9-volt battery, available with NIST, UK, or ISO standard traceable calibration certificate; *see details on pages 38-39*		
DataTrac Software for AirChek 3000, software on USB stick and adapter cable		877-91K

AirChek 3000 requires 1/4-inch ID tubing; see page 45.

SKC AirChek Sample Pumps

Outstanding Ease in Air Sampling — 5 to 5000 ml/min

- **Flows from 5 to 5000 ml/min**
  - Automatic constant flows maintained within ± 5%
  - 5 to 500 ml/min with low flow holder *(see page 36)*
  - Multi-tube sampling in low flow mode *(see page 37)*
- **High back pressure compensation**
  - Up to 50 inches water at 2 L/min
- **Intuitive touch operation**
- **Long run times on Li-Ion battery**
- **New! Economical Lite Cradle charger for AirChek Essential+** *(see pages 17 and 35)*
- **Correct flow for changes in temperature and atmospheric pressure**
- **Flow fault with auto-restart**
- **Bright running and status LEDs**
- **Tough no-slip case**
- **Ultra-quiet – average 51.7 dB**
  (37-mm, 0.8 µm MCE filter at 2 L/min)
- **Small and lightweight**
  - 4.1 x 3.7 x 2.8 inches (10.4 x 9.4 x 7.1 cm)
  - 19.4 ounces (550 grams)
- **Screen protection and security**
- **Designed to meet ISO 13137**

SCAN ME

NEED A BASIC PUMP?
The AirChek Essential is still available. Contact SKC!

AirChek®	Low Price Simplest Operation	Fully Programmable Easy Navigation	Bluetooth-connectivity Mobile App
Operation	Touch screen	Color touch screen	Touch screen
Display	High contrast backlit B&W LCD, battery status, and elapsed run time	Color LCD, time, date, battery status, real-time flow rate, sample volume, ambient temperature, atm. pressure, fault, accumulated volume, elapsed time, pump run and stop status	High contrast backlit B&W LCD, time, date, battery status, flow rate, fault, sample volume, temp, atm. pressure, back pressure, programmed run remaining time, and elapsed run time
Programmable – Continuous, Timed, and Intermittent Sampling (presets available)		●	●
PC Compatible with DataTrac Pro Software – Download Sampling History		● †	●
Bluetooth Connectivity with PC and Mobile			● ‡
SmartWave Mobile App			●
Constant Pressure Mode			●
CalChek Hands-free Single-point Flow Rate Verification and Full Calibration with chek-mate Flowmeter		●	
Charging	**Lite Cradle** (charging, non-chainable) **Standard Cradle** (charging, chainable up to 5)	**Standard Cradle** (charging and CalChek connection, chainable up to 5) **e-Cradle** (charging, CalChek, and PC communication, chainable with Standard Cradles)	**Standard Cradle** (charging, chainable up to 5)
Certifications	**Intrinsic safety:** UL913, CAN/CSA C22.2, ATEX, IECEx, UKEX **Other:** CE, UKCA	**Intrinsic safety:** UL913, CAN/CSA C22.2 **Other:** CE, UKCA	**Intrinsic safety:** UL913, CAN/CSA C22.2, ATEX, IECEx, UKEX **Other:** CE, UKCA
Ordering Information	**Page 17**	**Page 18**	**Page 19**

† *Requires 877-93 or 220-900 (included in some kits - see p. 18)* ‡ *Requires 877-94 to use Bluetooth with PC (included in some kits - see p. 19)*

AirChek ESSENTIAL+ ORDERING

On/Off-style Pump with Easy Touch Screen Operation to 5000 ml/min, High Value

Description	SKC Inc. Cat. No.	SKC Ltd. Cat. No.
AirChek Essential+ Pump only* with Li-Ion battery pack and screwdriver set, *requires charging cradle and power supply; see kits or accessories below*	220-3100	220-3100

AirChek Essential+ Pump Kits*		SKC Inc. Cat. No.	SKC Ltd. Cat. No.
Single Pump Kit-Basic includes pump as above, Lite Charging Cradle, Single Cradle Power Supply with cord, 39 inches (1 meter) of Tygon tubing, and 1 Step by Step Guide, in a durable carry case	100-240 V		220-3100K
Single High Flow Pump Kit includes pump as above, Lite Charging Cradle, Single Cradle Power Supply with cord, and filter cassette holder, in a soft-sided nylon carry case	100-240 V	220-3100-K	
Single Pump Kit-Dust includes pump as above, Lite Charging Cradle, Single Cradle Power Supply with cord, calibration adapter, 39 inches (1 meter) of Tygon tubing, plastic IOM MultiDust Sampler, 5 plastic IOM MultiDust cassettes, and 1 Step by Step Guide, in a durable carry case	100-240 V		220-3100KP
Single Pump Kit-Vapour includes pump as above, Lite Charging Cradle, Single Cradle Power Supply with cord, 39 inches (1 meter) of Tygon tubing, All-in-One adjustable tube holder, Type A tube cover, tube breaker, and 1 Step by Step Guide, in a durable carry case	100-240 V		220-3100KV
Single High/Low Flow Pump Kit includes pump as above, Lite Charging Cradle, Single Cradle Power Supply with cord, filter cassette holder, All-in-One adjustable tube holder, and Type A tube cover, in a soft-sided nylon carry case	100-240 V	220-3100-KD	
Single Pump Kit-Dust and Vapour includes pump as above, 1 Lite Charging Cradle and power supply with cord, and all media and accessories as described in the Single Vapour and Single Dust kits, in one durable carry case	100-240 V		220-3100KC
3-pack High/Low Flow Pump Kit includes 3 each: pumps as above, Lite Charging Cradles, filter cassette holders, All-in-One adjustable tube holders, Type A tube covers; and 1 Multi Cradle Power Supply and Splitter with cord, in a hard-sided case	100-240 V	220-3100-K3D	
5-pack High Flow Pump Kit includes 5 each: pumps as above, Lite Charging Cradles, filter cassette holders (SKC Inc. Cat. No. 220-3100-K5 only), 39-inch (1 meter) lengths of Tygon tubing (SKC Ltd. Cat. No. 220-3100K5 only); 1 Multi Cradle Power Supply and Splitter with cord; 3 Step by Step Guides (SKC Ltd. Cat. No. 220-3100K5 only), in a hard-sided case	100-240 V	220-3100-K5	220-3100K5
5-pack Pump Kit-Dust includes 5 each: pumps as above, Lite Charging Cradles, plastic IOM MultiDust Samplers, 39-inch (1 meter) lengths of Tygon tubing; 15 plastic IOM MultiDust cassettes; 1 calibration adapter and Multi Cradle Power Supply and Splitter with cord; and 3 Step by Step Guides, in a durable carry case	100-240 V		220-3100K5P
5-pack Pump Kit-Vapour includes 5 each: pumps as described above, Lite Charging Cradles, 39 inches (1 meter) lengths of Tygon tubing, All-in-One adjustable tube holders, and Type A tube covers; 1 tube breaker and Multi Cradle Power Supply and Splitter with cord; and 3 Step by Step Guides, in a durable carry case	100-240 V		220-3100K5V
5-pack High/Low Flow Pump Kit includes 5 each: pumps as above, Lite Charging Cradles, filter cassette holders, All-in-One adjustable tube holders, Type A tube covers; and 1 Multi Cradle Power Supply and Splitter with cord, in a hard-sided case	100-240 V	220-3100-K5D	
5-pack Pump Kit-Dust and Vapour includes 5 pumps as above, 5 Lite Cradles, 1 Multi Cradle Power Supply and Splitter with cord, and all media and accessories as described in the 5-pack Vapour and 5-pack Dust kits, in one durable carry case	100-240 V		220-3100K5C

Accessories		Cat. No.	Qty.
Lite Charging Cradle, non-chainable, for AirChek Essential+ pumps; *requires Cat. No. 220-600 or 220-851; see below*		220-850	ea
Standard Charging Cradle, chainable, for AirChek Essential+, TOUCH, and Connect pumps, *requires Cat. No. 220-600 or 220-700 below*		220-800	ea
Single Cradle Power Supply for All AirChek Touch Series Pump Cradles, compatible with a single Standard Cradle Cat. No. 220-800, Lite Cradle Cat. No. 220-850, or e-Cradle Cat. No. 220-900	100-240 V	220-600	ea
Multi Cradle Power Supply and Splitter for Lite Cradles only, for use with 1 to 5 Lite Cradles Cat. No. 220-850	100-240 V	220-851	ea
Multi Cradle Power Supply for Standard Cradles, for use with 2 to 5 chained Standard Cradles Cat. No. 220-800; not compatible with Lite Cradle Cat. No. 220-850	100-240 V	220-700	ea
Medium Flow chek-mate Flowmeter, 0.5 to 5 L/min, includes 9-volt battery, available with NIST, UK, or ISO standard traceable calibration certificate; *see details on pages 38-39*			
Replacement Battery Pack,* Li-Ion		P75718	ea

* *AirChek Essential+ pumps contain Li-Ion batteries and are subject to special shipping regulations.*

AirChek Essential+ requires ¼-inch ID tubing; see page 45.

See pump features on **page 16.**

AirChek TOUCH ORDERING

Fully Programmable, Full-color Touch Screen for Easy Navigation, 5 to 5000 ml/min

Description	SKC Inc. Cat. No.	SKC Ltd. Cat. No.
AirChek TOUCH Pump only* with Li-Ion battery pack and screwdriver set, *requires charging cradle and power supply; see kits or accessories below, connectivity to PC requires Cat. No. 877-93 below*	220-5000TC	220-5000TC

AirChek TOUCH Pump Kits*		SKC Inc. Cat. No.	SKC Ltd. Cat. No.
Single Pump Kit-Basic includes pump as above, e-Cradle and power supply with cord, 39 inches (1 meter) of Tygon tubing, and 1 Step by Step Guide, in a durable carry case	100-240 V		220-5000TCK
Single High Flow Pump Kit includes pump as above, Standard Cradle, power supply with cord, and filter cassette holder, in a soft-sided nylon carry case, *connectivity to PC requires Cat. No. 877-93 or 220-900 below*	100-240 V	220-5000TC-K	
Single Pump Kit-Dust includes pump as above, e-Cradle and power supply with cord, plastic IOM MultiDust Sampler, 5 plastic MultiDust cassettes, calibration adapter, 39 inches (1 meter) of Tygon tubing, USB cable, and 1 Step by Step Guide, in a durable carry case	100-240 V		220-5000TCKP
Single Pump Kit-Vapour includes pump as above, e-Cradle and power supply with cord, All-in-One adjustable tube holder, Type A tube cover, tube breaker, 39 inches (1 meter) of Tygon tubing, USB cable, and 1 Step by Step Guide, in a durable carry case	100-240 V		220-5000TCKV
Single Pump Kit-Dust and Vapour includes pump as above, e-Cradle and power supply with cord, and all media and accessories described in the Single Vapour kits and Dust kits, in one durable carry case	100-240 V		220-5000TCKC
Single High/Low Flow Pump Kit includes pump as above, Standard Cradle, power supply with cord, filter cassette holder, All-in-One adjustable tube holder, and Type A protective tube cover, in a soft-sided nylon carry case *connectivity to PC requires Cat. No. 877-93 or 220-900 below*	100-240 V	220-5000TC-KD	
Single High/Low Flow Enhanced Pump Kit includes pump as above, e-Cradle and power supply with cord, USB cable for use with free DataTrac Pro software download, filter cassette holder, All-in-One adjustable tube holder, and Type A tube cover, in a soft-sided nylon carry case	100-240 V	220-5000TC-KDE	
3-pack High/Low Flow Pump Kit includes 3 each: pumps as above, filter cassette holders, All-in-One adjustable tube holders, and Type A protective tube covers; 2 Standard Cradles, 1 e-Cradle, power supply with cord, and USB cable for use with free DataTrac Pro software download, in a hard-sided case	100-240 V	220-5000TC-K3D	
5-pack Pump Kit-Basic includes 5 each: pumps as above, 39-inch (1 meter) lengths of Tygon tubing; 4 Standard Cradles; 1 e-Cradle, power supply with cord, and USB cable; and 3 Step by Step Guides, in a durable case	100-240 V		220-5000TCK5
5-pack High Flow Pump Kit includes 5 pumps as above and filter cassette holders, 4 Standard Cradles, 1 e-Cradle, power supply with cord, and USB cable for use with free DataTrac Pro software download, in a hard-sided case	100-240 V	220-5000TC-K5	
5-pack Pump Kit-Dust includes 5 each: pumps as above, plastic IOM MultiDust Samplers, 39-inch (1 meter) lengths of Tygon tubing; 15 plastic IOM MultiDust cassettes; 4 Standard Cradles; 1 e-Cradle, power supply with cord, USB cable, and calibration adapter; and 3 Step by Step Guides, in a durable carry case	100-240 V		220-5000TCK5P
5-pack Pump Kit-Vapour includes 5 each: pumps as above, All-in-One adjustable tube holders, Type A tube covers, 39-inch (1 meter) lengths of Tygon tubing; 4 Standard Cradles; 1 e-Cradle, power supply with cord, tube breaker, and USB cable; and 3 Step by Step Guides, in a durable carry case	100-240 V		220-5000TCK5V
5-pack Pump Kit-Dust and Vapour includes 5 pumps as above, 4 Standard Cradles, 1 e-Cradle and power supply with cord, and all media and accessories described in 5-pack Vapour kits and Dust kits, in one durable carry case	100-240 V		220-5000TCK5C
5-pack High/Low Flow Pump Kit includes 5 each: pumps as above, filter cassette holders, All-in-One adjustable tube holders, and Type A protective tube covers; 4 Standard Cradles, 1 e-Cradle, power supply with cord, and USB cable for use with free DataTrac Pro software download, in a hard-sided case	100-240 V	220-5000TC-K5D	

Accessories		Cat. No.	Qty.
Standard Charging Cradle, chainable, for AirChek Essential+, TOUCH, and Connect pumps, *requires Cat. No. 220-600 or 220-700 below*		220-800	ea
Enhanced Charging Cradle (e-Cradle), chainable, for AirChek TOUCH, provides charging, CalChek auto flow rate verification connection, and PC communication, includes USB cable for use with free DataTrac Pro software download, *requires Cat. No. 220-600 or 220-700 below*		220-900	ea
Single Cradle Power Supply for All AirChek Touch Series Pump Cradles, compatible with a single Standard Cradle Cat. No. 220-800, Lite Cradle Cat. No. 220-850, or e-Cradle Cat. No. 220-900	100-240 V	220-600	ea
Multi Cradle Power Supply for Standard and e-Cradles, for use with 2 to 5 chained Standard Cradles Cat. No. 220-800 or 1 e-Cradle 220-900 and up to 4 Standard Cradles 220-800; *not compatible with Lite Cradle 220-850*	100-240 V	220-700	ea
CalChek Communication Cable, *required for auto flow verification with Medium Flow chek-mate Flowmeter, see pages 38-39*		375-200	ea
DataTrac Pro for AirChek TOUCH Hardware Accessory Kit, *see page 32*		877-93	ea
Medium Flow chek-mate Flowmeter, 0.5 to 5 L/min, includes 9-volt battery, available with NIST, UK, or ISO standard traceable calibration certificate; *see details on pages 38-39*			
Replacement Battery Pack,* Li-Ion		P75718	ea

* *AirChek TOUCH pumps contain Li-Ion batteries and are subject to special shipping regulations.*

AirChek TOUCH requires 1/4-inch ID tubing; see page 45.

See pump features on **page 16.**

AirChek CONNECT ORDERING

Bluetooth Connectivity, Mobile App, 5 to 5000 ml/min

Description	SKC Inc. Cat. No.	SKC Ltd. Cat. No.
AirChek Connect Pump only* with Li-Ion battery pack and screwdriver set, *requires charging cradle and power supply; see kits or accessories below, requires Cat. No. 877-94 below to use Bluetooth with PC*	220-4000	220-4000

AirChek Connect Pump Kits*		SKC Inc. Cat. No.	SKC Ltd. Cat. No.
Single Pump Kit-Basic includes pump as above, Standard Cradle and power supply with cord, 39 inches (1 meter) of Tygon tubing, and 1 Step by Step Guide, in a durable carry case	100-240 V		220-4000K
Single High Flow Pump Kit includes pump as above, Standard Cradle, power supply with cord, and filter cassette holder, in a soft-sided nylon carry case, *requires Cat. No. 877-94 below to use Bluetooth with PC*	100-240 V	220-4000-K	
Single Pump Kit-Dust includes pump as above, Standard Cradle, power supply with cord, calibration adapter, 39 inches (1 meter) of Tygon tubing, plastic IOM MultiDust Sampler, 5 plastic IOM MultiDust cassettes, and 1 Step by Step Guide, in a durable carry case, *requires Cat. No. 877-94 below to use Bluetooth with PC*	100-240 V		220-4000KP
Single Pump Kit-Vapour includes pump as above, Standard Cradle and power supply with cord, All-in-One adjustable tube holder, Type A tube cover, tube breaker, 39 inches (1 meter) of Tygon tubing, and 1 Step by by Step Guide, in a durable carry case, *requires Cat. No. 877-94 below to use Bluetooth with PC*	100-240 V		220-4000KV
Single High/Low Flow Pump Kit includes pump as above, Standard Cradle, power supply with cord, filter cassette holder, All-in-One adjustable tube holder, and Type A tube cover, in a soft-sided nylon carry case, *requires Cat. No. 877-94 below to use Bluetooth with PC*	100-240 V	220-4000-KD	
Single Pump Kit-Dust and Vapour includes pump as above, Standard Cradle and power supply with cord, and all media and accessories described in Single Vapour kits and Dust kits, in one durable carry case, *requires Cat. No. 877-94 below to use Bluetooth with PC*	100-240 V		220-4000KC
3-pack High/Low Flow Pump Kit includes 3 each: pumps as above, Standard Cradles and power supply with cord, filter cassette holders, All-in-One adjustable tube holders, and Type A tube covers; and 1 DataTrac Pro USB Bluetooth Adapter (software available via free download), in a hard-sided case	100-240 V	220-4000-K3D	
3-pack High Flow Pump Kit includes 3 each: pumps as above, Standard Cradles and power supply with cord, and filter cassette holders; and 1 DataTrac Pro USB Bluetooth Adapter (software available via free download), in a hard-sided case	100-240 V	220-4000-K3	
5-pack High Flow Pump Kit includes 5 each: pumps as above, Standard Cradles, power supply with cord, filter cassette holders; and 1 DataTrac Pro USB Bluetooth Adapter (software available via free download), in a hard-sided case	100-240 V	220-4000-K5	
5-pack Pump Kit-Basic includes 5 each: pumps as above, Standard Cradles, power supply with cord, 39-inch (1 meter) lengths of Tygon tubing; and 3 Step by by Step Guides, in a durable carry case, *requires Cat. No. 877-94 below to use Bluetooth with PC*	100-240 V		220-4000K5
5-pack Pump Kit-Dust includes 5 each: pumps as above, Standard Cradles, power supply and cord, plastic IOM MultiDust Samplers, 39-inch (1 meter) lengths of Tygon tubing; 15 plastic IOM MultiDust cassettes; 1 calibration adapter; and 3 Step by Step Guides, in a durable carry case, *requires Cat. No. 877-94 below to use Bluetooth with PC*	100-240 V		220-4000K5P
5-pack Pump Kit-Vapour includes 5 each: pumps as above, Standard Cradles, power supply with cord, All-in-One adjustable tube holders, Type A tube covers, 39-inch (1 meter) lengths of Tygon tubing; 1 tube breaker; and 3 Step by Step Guides, in a durable carry case, *requires Cat. No. 877-94 below to use Bluetooth with PC*	100-240 V		220-4000K5V
5-pack High/Low Flow Pump Kit includes 5 each: pumps as above, Standard Cradles and power supply with cord, filter cassette holders, All-in-One adjustable tube holders, Type A tube covers; and 1 DataTrac Pro USB Bluetooth Adapter (software available via free download), in a hard-sided case	100-240 V	220-4000-K5D	
5-pack Pump Kit-Dust and Vapour includes 5 pumps as above, 5 Standard Cradles and power supply with cord, and all media and accessories described in 5-pack Vapour kits and Dust kits, in one durable carry case, *requires Cat. No. 877-94 below to use Bluetooth with PC*	100-240 V		220-4000K5C

Accessories		Cat. No.	Qty.
Standard Charging Cradle, chainable, for AirChek Essential+, TOUCH, and Connect pumps, *requires Cat. No. 220-600 or 220-700 below*		220-800	ea
Single Cradle Power Supply for All AirChek Touch Series Pump Cradles, compatible with a single Standard Cradle Cat. No. 220-800, Lite Cradle Cat. No. 220-850, or e-Cradle Cat. No. 220-900	100-240 V	220-600	ea
Multi Cradle Power Supply for Standard and e-Cradles, for use with 2 to 5 chained Standard Cradles Cat. No. 220-800 or 1 e-Cradle 220-900 and up to 4 Standard Cradles 220-800; not compatible with Lite Cradle 220-850	100-240 V	220-700	ea
DataTrac Pro USB Bluetooth Adapter, for AirChek Connect and Pocket Pump TOUCH, *see page 33 for details*		877-94	ea
Medium Flow chek-mate Flowmeter, 0.5 to 5 L/min, includes 9-volt battery, available with NIST, UK, or ISO standard traceable calibration certificate; *see details on pages 38-39*			
Replacement Battery Pack,* Li-Ion		P75718	ea

* *AirChek Connect pumps contain Li-Ion batteries and are subject to special shipping regulations.*

AirChek Connect requires ¼-inch ID tubing; see page 45.

See pump features on **page 16.**

AirChek XR5000

Powerful Sampling – Simple Operation

- **Extended flow range: 5 to 5000 ml/min†**
  - Suitable for low flow gas/vapor *(see page 36)* or high flow particulate sampling
  - Multi-tube sampling option allows up to four tube samples to be taken simultaneously, each at different flow rates if desired *(see page 37)*
- **Extended back pressure capabilities**
  - Up to 50 inches of water at 2 L/min
- **2 interchangeable battery options**
  - High-power Li-Ion for extended runs to 40 hours
  - Standard Li-Ion for runs to 20 hours
- **Highly accurate electronic flow control system**
- **Automatic flow correction for changes in temperature provides accurate air volumes**
- **Extremely simple operation**
  - Large three-button keypad
  - Continuous run with the push of a button
  - Bright blue pump status LED
  - Easy-to-read LCD displays elapsed time and accumulated run time
- **Set-and-go timer**
  - Timed and delayed runs up to 9999 minutes
- **Sample integrity**
  - Lockable keypad
  - Automatic flow fault
  - Auto-restart attempted after 15 seconds in flow fault
- **Standard model weighs only 16 ounces (454 grams)**

† *5 to 500 ml/min with low flow adjustable holder, see page 36*

Certifications

Intrinsic safety: UL913, CAN/CSA C22.2

Other: CE, UKCA

Enhanced Battery Power for Extended Runs!

XR5000 Model	2 L/min*	5 L/min*
High-power Li-Ion	40 hours	22 hours
Standard Li-Ion	20 hours	11 hours

* *Results of run time tests using 37-mm, 0.8-µm MCE filters with new pumps and batteries. Pump and battery performance may vary.*

V Video | P PowerPoint | W Webinar | S Sampling Solution

Visit skcinc.com

Enhanced battery power for extended run times

Simple operation

Bright blue status LED

Small footprint and only 16 ounces!

SKC Inc. AirChek XR5000 Pumps and Kits#

Description		4-cell High-power Li-Ion# Battery SKC Inc. Cat. No.	2-cell Standard Li-Ion# Battery SKC Inc. Cat. No.
Pump with battery and screwdriver set, *requires charger; see kits or chargers below*		210-5001	210-5002
Starter Kit includes pump, charger, 3 feet (0.9 meter) of Tygon tubing, and collar clip with cable tie	100-240 V	210-5001-S	210-5002-S
Single High Flow Pump Kit includes pump, charger, and cassette holder, in a soft-sided nylon carry case	100-240 V	210-5001K	210-5002K
5-pack High Flow Pump Kit includes 5 each: pumps and cassette holders; and 1 Take Charge 5 Multi-charger,† in a hard-sided case	100-240 V	210-5001K5	210-5002K5
5-pack High/Low Flow Pump Kit includes 5 each: pumps, cassette holders, All-in-One adjustable tube holders, Type A protective tube covers; and 1 Take Charge 5 Multi-charger,† in a hard-sided case	100-240 V	210-5001K5D	210-5002K5D
Replacement Li-Ion Battery Pack#		P85004A	P85002A

 # AirChek XR5000 pumps contain Li-Ion batteries and are subject to special shipping regulations.

SKC Ltd. AirChek XR5000 Pumps and Kits#

Description		4-cell High-power Li-Ion# Battery SKC Ltd. Cat. No.	2-cell Standard Li-Ion# Battery SKC Ltd. Cat. No.
Pump with battery and screwdriver set, *requires charger, see kits or charger below*		210-5001	210-5002
Single Pump Kit-Basic includes pump as above, charger, 39 inches (1 meter) of Tygon tubing, and 1 Step by Step Guide, in a durable carry case	100-240 V	210-5001K	210-5002K
Single Pump Kit-Vapour includes pump as above, charger, 39 inches (1 meter) of Tygon tubing, All-in-One adjustable tube holder, tube breaker, Type A protective tube cover, and 1 Step by Step Guide, in a durable carry case	100-240 V	210-5001KV	210-5002KV
Single Pump Kit-Dust includes pump as above, charger, calibration adapter, 39 inches (1 meter) of Tygon tubing, plastic IOM MultiDust Sampler, 5 plastic IOM MultiDust cassettes, and 1 Step by Step Guide, in a durable carry case	100-240 V	210-5001KP	210-5002KP
Single Pump Kit-Dust and Vapour includes pump as above and all media and accessories as described in the Single Vapour and Single Dust kits, in one durable carry case	100-240 V	210-5001KC	210-5002KC
5-pack Pump Basic Kit includes 5 each: pumps as above, single chargers, 39-inch (1 meter) lengths of Tygon tubing; and 3 Step by Step Guides, in a durable carry case	100-240 V	210-5001K5	210-5002K5
5-pack Pump Kit-Vapour includes 5 each: pumps as above, single chargers, All-in-One adjustable tube holders, Type A protective tube covers, 29-inch (1 meter) lengths of Tygon tubing; 1 tube breaker; and 3 Step by Step Guides, in a durable carry case	100-240 V	210-5001K5V	210-5002K5V
5-pack Pump Kit-Dust includes 5 each: pumps as above, single chargers, plastic IOM MultiDust Samplers, 39-inch (1 meter) lengths of Tygon tubing; 15 plastic IOM MultiDust cassettes; and 3 Step by Step Guides, in a durable carry case	100-240 V	210-5001K5P	210-5002K5P
5-pack Pump Kit-Combined includes 5 pumps as above, 5 single chargers, and all media and accessories as described in 5-pack Vapour kits and 5-pack Dust kits, in one durable carry case	100-240 V	210-5001K5C	210-5002K5C
Replacement Battery Pack#		P85004A	P85002A

 # AirChek XR5000 pumps contain Li-Ion batteries and are subject to special shipping regulations.

Accessories

Description		Cat. No.	Qty.
Single Charger, for high-power and standard Li-Ion pumps	100-240 V	223-241	ea
Take Charge 5 Multi-charger†, 5 stations, for high-power and standard Li-Ion pumps	100-240 V	223-441	ea
Low Flow Adapter Kit (5 to 500 ml/min) includes All-in-One adjustable tube holder and Type A protective tube cover, *suitable for both XR5000 models*		210-500	ea
Medium Flow chek-mate Flowmeter, 0.5 to 5 L/min, includes 9-volt battery, available with NIST, UK, or ISO standard traceable calibration certificate; *see details on pages 38-39*			

† Not CE/UKCA marked

AirChek XR5000 requires 1/4-inch ID tubing; see page 45.

Universal Series

Classic Workhorse from 5 ml/min to 5 L/min

- **Constant flows from 1 to 5 L/min**
  - MTX models: 1 to 4 L/min
- **Low flows from 5 to 500 ml/min with adjustable tube holder** *(see page 36)*
- **Long 12+ hours run time** *(4 L/min at 20 inches water back pressure)*
  - MTX models: 8 hours run time (3 L/min at 20 inches water back pressure)
- **Heavy duty and rugged**
- **Lightweight — only 34 ounces (964 grams)**
  - MTX models: 32 ounces (915 grams)
- **Choose the automatic features that meet your requirements**

SKC Universal Series Sample Pumps are the true workhorses of the industry and found in most air sampling toolboxes. Rugged and versatile Universal Series Sample Pumps are two pumps in one! Their proven technology provides constant flows from 1 to 5 L/min for use with filter cassettes, size-selective samplers, and impingers. The built-in regulator used with an Adjustable Low Flow Tube Holder is ideal for sampling with sorbent tubes from 5 to 500 ml/min. Three Universal models offer different feature sets to meet your applications and budget.

Universal 44XR
Choose the simple turn-on-and-go 44XR for economy and versatility. **Also available as ATEX-approved Cat. No. 224-44MTX.** *See ordering on facing page.*

Universal PCXR4
With its timer, automatic fault shutdown with time retention, and convenient HOLD feature, the Universal PCXR4 Sample Pump is ideal for compliance sampling! **Also available as ATEX-approved Cat. No. 224-PCMTX4.** *See ordering on facing page.*

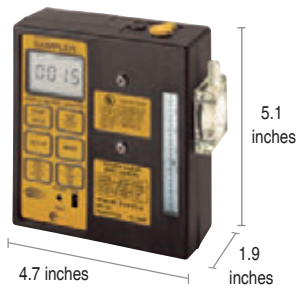
Universal PCXR8
The most deluxe of the Universal Series, the PCXR8 features a highly accurate timer, automatic fault shutdown with time retention, convenient HOLD feature, and full programmability, including delayed start, timed shutdown, and extended intermittent sampling up to 7 days. **Also available as ATEX-approved Cat. No. 224-PCMTX8.** *See ordering on facing page.*

Universal Pumps, Kits, and Accessories

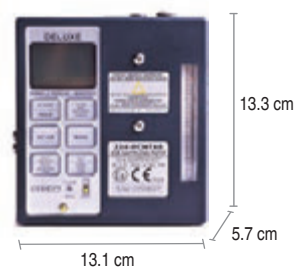
Description		5 to 5000 ml/min SKC Inc. UL Listed	5 to 4000 ml/min SKC Ltd. ATEX approved
Universal Pump with NiMH battery pack and screwdriver set *Low flow (5 to 500 ml/min) requires adjustable low flow holder; see p. 36*		224-PCXR8 224-PCXR4 224-44XR	224-PCMTX8 224-PCMTX4 224-44MTX
Starter Kit includes pump, single PowerFlex charger with cable, 3 feet (0.9 meter) of Tygon tubing, and collar clip with cable tie	100-240 V	224-PCXR8-S 224-PCXR4-S 224-44XR-S	
Single Pump Kit-Basic includes pump as above, single charger, 39 inches (1 meter) of Tygon tubing, and 1 Step by Step Guide, in a durable carry case	100-240 V		224-PCMTX8K 224-PCMTX4K 224-44MTXK
Single Pump Kit-High/Low Flow includes pump as above, single PowerFlex charger with cable, filter cassette holder, adjustable low flow holder, and Type A protective tube cover, in a soft-sided nylon carry case†	100-240 V	224-PCXR8KD 224-PCXR4KD 224-44XRKD	
Single Pump Kit-Dust includes pump as above, single charger, calibration adapter, 39 inches (1 meter) of Tygon tubing, plastic IOM MultiDust Sampler, 5 plastic IOM MultiDust cassettes, and 1 Step by Step Guide, in a durable carry case	100-240 V		224-PCMTX8KP 224-PCMTX4KP 224-44MTXKP
Single Pump Kit-Vapour includes pump as above, single charger, 39 inches (1 meter) of Tygon tubing, single adjustable low flow holder, tube breaker, Type A protective tube cover, and 1 Step by Step Guide, in a durable carry case	100-240 V		224-PCMTX8KV 224-PCMTX4KV 224-44MTXKV
Single Pump Kit-Dust and Vapour includes pump as above, single charger, and all media and accessories as described in Single Vapour kits and Single Dust kits, in one durable carry case	100-240 V		224-PCMTX8KC 224-PCMTX4KC 224-44MTXKC
5-pack Pump Kit-Basic includes 5 each: pumps as above, 39-inch (1 meter) lengths of Tygon tubing; one 5-station charger; and 3 Step by Step Guides, in a durable carry case	100-240 V		224-PCMTX8K5 224-PCMTX4K5 224-44MTXK5
5-pack Pump Kit-High/Low Flow includes 5 each: pumps as above, single adjustable low flow holders, Type A protective tube covers, filter cassette holders; and one 5-station PowerFlex charger with 5 cables (223-1002), in a hard-sided carry case	100-240 V	224-PCXR8K5D 224-PCXR4K5D 224-44XRK5D	
5-pack Pump Kit-Dust includes 5 each: pumps as above, plastic IOM MultiDust Samplers, 39-inch (1 meter) lengths of Tygon tubing; 15 plastic IOM MultiDust cassettes; 1 calibration adapter and 5-station charger; and 3 Step by Step Guides, in a durable carry case	100-240 V		224-PCMTX8K5P 224-PCMTX4K5P 224-44MTXK5P
5-pack Pump Kit-Vapour includes 5 each: pumps as above, single adjustable low flow holders, Type A protective tube covers, 39-inch (1 meter) lengths of Tygon tubing; one 5-station charger and tube breaker; and 3 Step by Step Guides, in a durable carry case	100-240 V		224-PCMTX8K5V 224-PCMTX4K5V 224-44MTXK5V
5-pack Pump Kit-Dust and Vapour includes 5 pumps as above, one 5-station charger, and all media and accessories as described in 5-pack Vapour kits and 5-pack Dust kits, in one durable carry case	100-240 V		224-PCMTX8K5C 224-PCMTX4K5C 224-44MTXK5C

† *Single kits are also available in hard-sided case. Contact SKC for ordering information.*

Universal Pumps require 1/4-inch ID tubing; *see page 43.*



Universal PCXR8 shown



Universal MTX models are ATEX-approved and available as Cat. Nos. 224-44MTX, 224-PCMTX4, and 224-PCMTX8 (shown)

Certifications

Intrinsic safety: UL913, CAN/CSA C22.2

ATEX models available; contact SKC.

Other: CE, UKCA

Accessories

Multiple-tube sampling!

Extend the flow range and applications of your Universal pumps. See the low flow accessories needed for multiple-tube sampling on page 37.

Leland Legacy

Area or Personal High Flow Sample Pump

The SKC Leland Legacy® Sample Pump provides the high flows and long run times of a vacuum-style pump in a compact, portable, and battery-operated sampler. Leland Legacy is ideal for asthma studies in schools, unattended 24-hour PM10 and PM2.5 ambient air sampling, and higher flow respirable dust sampling with SKC PPI Samplers.*

- **High flows from 5 to 15 L/min**
- **24-hour run times with Li-Ion battery**
- **Internal flow sensor ensures set flow is maintained accurately**
- **Flexible programming**
  - Manual three-button operation from large built-in keypad
  - PC programmability with DataTrac Software and your PC

* *Not suitable for applications requiring intrinsic safety or high back pressure compensation such as asbestos clearance monitoring*

Fast, Easy, and Automatic Flow Rate Verification

Direct Communication with chek-mate Flowmeter Using the CalChek Feature

Connect the Leland Legacy Sample Pump with CalChek Communication Cable accessory to the High Flow chek-mate Flowmeter for accurate, automatic flow rate verification without manual adjustments. *See details on page 39.*

Look for chek-mate and the CalChek Cable in ordering on page 25.

Childhood asthma studies — partner with the Sioutas Impactor (see page 132)

PM10 and PM2.5
See Leland Legacy in deployable systems on pages 26-27.

Respirable dust — partner with 8 L/min PPI sampler. See pages 126-128.

24-hour PM Sampling with Impactors at Flows up to 10 L/min

- Protected top-mounted computer interface and battery charging jack
- Inlet port with removable protective filter
- Bright flashing LED run indicator
- Large Liquid Crystal Display (LCD)
- Convenient battery status icon
- Large, easy-to-use 3-button keypad
- Tough rubber overmolding protects pump and provides a sure grip
- Anti-static thermoplastic case

DataTrac® Software for Leland Legacy®

Windows-based DataTrac Software for Leland Legacy sample pumps provides for maximum use of pump features and sample history download to PC for reporting. *Software is available via free download; requires DataTrac Software Cable at bottom left.*

- Program/operate your pump
- Download sampling history from pump to PC
- Set up easy chain of custody sample sheets
- Manage data and produce reports

Certifications

CE, UKCA

Leland Legacy Pump Kits **To meet EC regulations and market requirements, the SKC Ltd. version of Cat. No. 100-3002K also contains 39 inches (1 meter) length of Tygon tubing. The SKC Ltd. version of Cat. No. 100-3002K5 contains 5 single chargers (in place of a Take Charge 5 Multi-charger) and 39-inch (1-meter) lengths of Tygon tubing. DataTrac Software USB cable is sold separately. Indicate "SKC Ltd. version" on your order, if appropriate.**		SKC Inc./ SKC Ltd. Cat. No.	Qty.
Leland Legacy Pump† with Li-Ion battery pack and screwdriver set, *requires charger; see kits or chargers below*		100-3002	ea
Single Pump Kit† includes pump as above and single charger, in a hard-sided carry case	100-240 V	100-3002K	ea
5-pack Pump Kit† includes 5 Leland Legacy pumps, one Take Charge 5 Multi-charger,** and DataTrac Software cable (USB - software available via free download), in a hard-sided case	100-240 V	100-3002K5	ea

Accessories		Cat. No.	Qty.
Single Charger, for Li-Ion battery-powered pumps	100-240 V	223-241	ea
Take Charge 5 Multi-charger,** 5 stations, for Li-Ion battery-powered pumps	100-240 V	223-441	ea
High Flow chek-mate Flowmeter, 5 to 30 L/min, includes 9-volt battery, available with NIST, UK, or ISO standard traceable calibration certificate; *see details on pages 38-39*			
Battery Charging Adapter, for charging batteries outside the pump		223-248	ea
CalChek Communication Cable, for use with chek-mate Flowmeter for automatic flow rate verification, *see page 39*		375-200	ea
DataTrac Software Cable, for Leland Legacy, USB; *software available via free download*	SKC Inc. SKC Ltd.	877-92 877-92K	ea ea
Replacement Battery Pack,† Li-Ion		P75692A	ea

† *Leland Legacy pumps contain Li-Ion batteries and are subject to special shipping regulations.*

** *Not CE/UKCA marked*

Leland Legacy requires 3/8-inch ID tubing; see page 45.

Ideal for use with IMPACT Sampler and Sioutas Impactor
see pages 129 and 132

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Deployable Sampler Systems

Ambient Air Kits for 24-hour Sampling

PERFORMANCE PROFILE

Flow Rate
10 L/min

Run Time
> 24 hrs (one battery charge)

Power
Rechargeable Li-Ion battery

Case Dimensions
18.5 x 14.1 x 6.9 in (47 x 36 x 18 cm)

System Weight
DPS: 13 lbs (5.9 kg)
DCS: 12.2 lbs (5.5 kg)

Certification
CE, UKCA

MORE INFORMATION
skcinc.com

- **One compact, portable case easily carried or shipped!**
- **Ideal for remote locations, indoor air sampling, and baseline surveys**
  - Pre-program automatic start and stop
  - 24-hour Li-Ion battery operation
  - Secure operation from within a heavy-duty lockable case
  - Quick-change battery packs
  - Low noise for indoors
- **Fast setup with modular components and quick-connect tubing**
- **System pump provides constant, accurate airflows**
  - Simple 3-button keypad for setting a single unattended sample run
  - Program for multiple runs with a PC and DataTrac for Leland Legacy Software; *see page 25 for details*

SKC Deployable Sampler Systems provide cost-effective ambient air sampling and are ideal for applications including fenceline, near-roadway, and remediation monitoring, baseline surveys, and indoor air studies. SKC offers two systems:

- **Deployable Particulate Sampler (DPS) System** for PM10 or PM2.5
- **Deployable Cartridge Sampler (DCS) System** for polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), pesticides, and associated particulates

Each system includes the fully programmable Leland Legacy Sample Pump, specially designed sampling head, and accessories for fast deployment and effective sampling; and it fits into one portable heavy-duty hard-sided case. Partner either system with DataTrac Software for advanced scheduling options and record keeping, *see page 25.*

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See Ordering Information on page 27.

Deployable Particulate Sampler (DPS) System

Ambient and Indoor PM10 or PM2.5 Sampling

Description		Cat. No.	Qty.
DPS System*# includes sample pump with battery connection case, charger (100-240 V), 2 external battery assemblies with adapters (packaged separately), IMPACT‡ sampling head, 2 filter cassettes, calibration adapter, rain cover for sampling head, 25 disposable impaction discs *(limited shelf-life)*, filter cassette opener, tubing with quick-connect fitting, and mounting bracket, in a heavy-duty lockable carry case	**PM10 Kit** **PM2.5 Kit**	**100-3901** **100-3903**	**ea** **ea**
Collection Filters for DPS System (not supplied with system) ***Select a filter based on your application; required for sampling***			
Quartz Filters, 47 mm, Tissuquartz, 432 µm thick		**225-1823**	**25**
PTFE Filters,§ 47 mm, 2.0-µm pore size, with PMP support ring		**225-1747**	**50**
Sampling Heads/Replacement Parts			
IMPACT Sampler includes sampler inlet and body, calibration adapter, filter cassette, and rain cover for sampler; *requires collection media (see above) and impaction substrate (see below) sold separately*	**PM2.5** **PM10**	**225-392** **225-390**	**ea** **ea**
IMPACT Sampler Inlet Only, interchangeable on IMPACT body	**PM2.5** **PM10**	**P54204** **P54202**	**ea** **ea**
Impaction Discs, 37 mm, pre-oiled, ready to use, disposable, *required for sampling, limited shelf-life*		**225-395** **225-395A**	**25** **50**
Filter Cassette, *required for sampling*		**225-396**	**ea**
Accessories			
Petri Dish Slide, for transport of filters up to 47 mm in diameter		**225-2-01**	**100**
High Flow chek-mate Flowmeter, 5 to 30 L/min, includes 9-volt battery, available with NIST, UK, or ISO standard traceable calibration certificate; *see details on pages 38-39*			

* *Provides data similar to Federal Reference Method samplers. The DPS System is not a US EPA reference or equivalent method for compliance sampling.*

\# *System contains Li-Ion batteries and is subject to special shipping regulations.*

§ *Back pressure on PTFE filters may vary within the same lot.*

‡ *US Patent No. 7,334,453*

Patented‡ IMPACT sampling head for DPS. For more information on IMPACT, see page 129.

Leland Legacy Sample Pump
The Power of the DPS and DCS Systems
See pages 24-25 for more information.

Deployable Cartridge Sampler (DCS) System

Ambient Sampling of PAHs, PCBs, Pesticides, and Associated Particulates

Description	Cat. No.	Qty.
DCS System*# includes sample pump with battery connection case, charger (100-240 V), 2 external battery assemblies with adapters (packaged separately), sampling head, calibration adapter, rain cover for sampling head, sample tubing with quick-connect fitting, calibration tubing, and mounting bracket, in a heavy-duty lockable carry case	**100-3960**	**ea**
Media Cartridges*, required, select based on application* ***Stainless steel cartridges containing media as described below, stainless steel support screens, and gaskets. Each cartridge is wrapped in aluminum foil and shipped in an aluminum can with lid.***		
Filter/PUF contains 41.3-mm length of PUF and a 47-mm quartz filter	**226-206**	**ea**
Filter/PUF/XAD-2/PUF contains a 47-mm quartz filter and 2 grams of XAD-2 sorbent sandwiched between two 20.6-mm lengths of PUF	**226-207**	**ea**
Accessories		
High Flow chek-mate Flowmeter, 5 to 30 L/min, includes 9-volt battery, available with NIST, UK, or ISO standard traceable calibration certificate; *see details on pages 38-39*		

* *Provides data similar to Federal Reference Method samplers. The DCS System is not a US EPA reference or equivalent method for compliance sampling.*

\# *System contains Li-Ion batteries and is subject to special shipping regulations.*

Sampling head holds media cartridge for DCS.

QuickTake 30

Powered by Supercharged Lithium-Ion Battery

10 to 30 L/min constant flow...
for sampling with BioStage viable cascade impactor, spore trap cassettes, microvacuum cassettes, the IOM Sampler at higher flows, or other samplers that require flows up to 30 L/min within the back pressure range of the pump

It's compact and portable!
QuickTake® 30 weighs only 4.8 pounds (2.2 kg) and features an easy-grip handle for portability.

Reliable long run times...
with powerful Li-Ion battery *(see page 29)*

Easy operation...
with large keypad buttons, high-contrast digital display, front-mounted intake for fast media setup, and programmable timer

Versatile!
Sample with a spore trap cassette directly on the inlet, with tubing and impactor or cassette, or with BioStage mounted on pump *(with accessory)*.

PROGRAMMABLE.

CONSTANT FLOW.

EASY FLOW RATE VERIFICATION.

14+ hours run time at 10 L/min!

SCAN ME

View demo with BioStage Impactor
https://youtu.be/lvFQx2R1V0M

QuickTake 30 for Dust, Mold, Bioaerosols, Asbestos, and More

10 to 30 L/min constant flow sample pump
- Maintains set flow throughout a sampling period for complete sample integrity
- Ideal for use with BioStage viable cascade impactor, spore trap cassettes such as VersaTrap, microvacuum cassettes, the IOM Sampler at higher flows, or other samplers that require flows up to 30 L/min

Long run times on a single battery charge
- AC charger/adapter for extended sampling
- Rechargeable Li-Ion battery pack

Compact and portable
- 9.3 x 8.4 x 3.5 inches (23.6 x 21.3 x 8.9 cm)
- Weighs only 4.8 pounds (2.2 kg)
- Handle for easy portability

Easy-to-use programmable timer for unattended sampling
- Select sample time presets or customize timer from 1 to 999 minutes
- Continuous run with manual shut-off
- Intermittent sampling
- Large, easy-to-use keypad

Easy to use
- Large keypad control
- End-of-cycle visible and audible alarms

High-contrast digital display

Low noise — average < 64 dBA at 3 feet
(37-mm, 0.8-µm MCE filter at 16.8 L/min)

QuickTake 30 with BioStage on mounting bracket – see page 134

QuickTake 30 with VersaTrap cassette mounted on pump inlet – see page 112

Use a QuickTake 30 with Asbestos cassette mounted on tripod – see page 102

ADVANTAGES

- ☑ Maintains constant flow even when used with media that create higher back pressure such as microvacuum cassettes *(see page 138)*
- ☑ A low-noise, battery-powered alternative to vacuum pumps

APPLICATIONS

QuickTake 30#

- ***Particulate sampling for 14+ hours§***
  - *Use with a 37-mm, 0.8-µm MCE filter at 10 L/min*
- ***Asbestos clearance sampling for 9+ hours§***
  - *For 9+ hours of run time and a total air volume of 5400 liters, use QuickTake 30 with a 25-mm, 1.2-µm MCE filter at 10 L/min with fully charged battery and pump connected to AC power.*
- ***VersaTrap (spore trap) sampling for 5 hours§***
  - *Operate the QuickTake 30 at 15 L/min*
- ***BioStage (viable cascade impactor) sampling for 4 hours§***
  - *Operate the QuickTake 30 at 28.3 L/min*

§ Results obtained using a new pump and new, fully charged battery. Pump and battery performance may vary.
 # Not CE/UKCA marked

Description		SKC Inc. Cat. No.	Qty.
QuickTake 30 Sample Pump*# and Charger	100-240 V	228-9530	ea
QuickTake 30 Sample Pump,*# Rotameter, and Charger	100-240 V	228-9530A	ea
QuickTake 30 BioStage Pump*# Kit includes pump, charger, rotameter, BioStage, mounting bracket with inlet adapter, and calibration adapter, in a deluxe carry case	100-240 V	228-9530K	ea
Accessories			
High Flow chek-mate Flowmeter, 5 to 30 L/min, includes 9-volt battery, available with NIST, UK, or ISO standard traceable calibration certificate; *see details on pages 38-39*			
Charger/Adapter	100-240 V	223-245	ea
Mounting Bracket for BioStage includes inlet adapter		228-9531	ea
Rotameter, 3 to 30 L/min		320-100	ea
Replacement Battery Pack,* Li-Ion		P75689	ea
Replacement Filter/O-ring Set includes 5 filters and 1 O-ring		P40021	ea
Tripod Stand, for cassette or BioStage Impactor		228-506	ea

* *QuickTake sample pumps contain Li-Ion batteries and are subject to special shipping regulations.* # *Not CE/UKCA marked*

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QuickTake 30 requires 3/8-inch ID tubing; see page 45.

Flite4 Programmable High Flow Area Pump for Asbestos and More

Flite4 Performance Profile

Flow Range
2 to 20 L/min

Operating Temperature
23 to 122 F (-5 to 50 C)

Battery
Lead-acid, 7-Ah capacity

Dimensions
4.4 x 6.4 x 8 in (11.2 x 16.3 x 20.3 cm)

Weight (pump only)
4.5 lbs (2.06 kg)

Certification
CE, UKCA *Not intrinsically safe*

Typical Run Time*

Filter	Flow (L/min)	Run Time (Hrs)
25-mm MCE, 0.8 µm	4	30
25-mm MCE, 0.8 µm	8	14
25-mm MCE, 0.8 µm	12	6
25-mm MCE, 1.2 µm	4	35
25-mm MCE, 1.2 µm	8	16
25-mm MCE, 1.2 µm	12	8
25-mm Glass Fiber	8	22
25-mm Glass Fiber	12	13
25-mm Glass Fiber	16	7

* *Results obtained using a new, fully charged 7-Ah battery in clean factory conditions. Pump and battery performance may vary.*

Flite4 Sample Pump with Aluminum Sampling Mast Cat. No. 901-213

- **Wide flow range: 2 to 20 L/min**
- **Fully programmable**
  - Manual run
  - Timed run and delayed start
  - Intermittent sampling
- **Backlit LCD display**
- **Robust powder-coated mild steel casing, sturdy handle**
- **Long run times**
- **High-performance sampling capabilities**
- **Convenient front-mounted power socket**
- **Can be operated in two orientations**
- **Battery or AC operation**
  - Long-run 7-Ah battery

14+ hours run time at 8 L/min

The highly versatile SKC Flite4 air sample pump provides high-performance sampling for asbestos and other particulates. With features such as a robust steel casing to withstand daily rigors, a front-mounted power socket to provide easy access for charging or powering, and a sturdy handle for portability, the Flite4 is the choice for most high-volume sampling applications. Use the fully programmable timer to set a manual run, a timed run with or without delayed start, or intermittent sampling. Flite4 is ideal for area and environmental monitoring, stack sampling, indoor air studies, asbestos monitoring, biosampling, and long-term background monitoring.

Description	Cat. No.	Qty.
Flite4 Sample Sample Pump# with screwdriver, *supplied without battery, see kit or Power Accessories below*	**901-4011**	**ea**
Flite4 Pump Kit, includes 7-Ah battery, charger (100-240 V), and 39 inches (1 meter) of Tygon tubing	**901-4011K**	**ea**

Sampling Accessories	Cat. No.	Qty.
Rigid Aluminum Sampling Mast, two piece, 39 inches (1 meter) high	**901-213**	**ea**
High Flow chek-mate Flowmeter, 5 to 30 L/min, includes 9-volt battery, available with NIST, UK, or ISO standard traceable calibration certificate; *see details on pages 38-39*		
Asbestos Sampling Head, 25 mm		
Plastic	**225-54**	**ea**
Aluminum	**225-54A**	**ea**

Power Accessories	Cat. No.	Qty.
Single Battery Charger for Flite Series Pumps, 110-240 V, multi-plug	**901-410**	**ea**
AC Adapter, 110-240 V, multi-plug	**901-411**	**ea**
Replacement Lead-acid Battery, 7-Ah capacity	**P901402**	**ea**

\# *Twin port model available. Contact SKC for details.*

Flite4 requires 1/4-inch ID tubing; see page 45.

AirLite

ECONOMY ON THE GO

5 to 3000 ml/min with Alkaline Batteries

- **Now available with timer!**
- **Simple operation**
  - Turn on, set flow, verify flow rate, and sample — no programming or battery charging
- **Simple power**
  - Economical, disposable AA alkaline batteries are ready to go anytime for over 10 hours*
- **Compact design**
  - AirLite fits in the palm of your hand!
  - 12 ounces (340 grams)
- **Sample integrity**
  - Constant flows up to 3000 ml/min‡
  - Patented** flow control system holds constant flow to ± 5% of set-point
  - Compensation for back pressure and temperature changes
  - Low battery and flow fault indicator and shut-off
- **The simple choice for:**
  - Abatement projects
  - Indoor air sampling
  - Emergency response
  - Silica

Certifications
CE, UKCA

AirLite® is the simple solution when a 5 to 3000 ml/min sampler is needed for abatement projects, indoor air sampling, and emergency response in environments that do not require intrinsic safety. AirLite maintains full back pressure compensation from 1000 to 3000 ml/min; flows from 5 to 500 ml/min require a low flow accessory *(see below)*. Powered by economical, disposable AA alkaline batteries, AirLite provides run times greater than 10 hours. AirLite is ready to go anytime you are!

Description	SKC Inc. Cat. No. (without timer)	SKC Inc. Cat. No. (with timer)	SKC Ltd. Cat. No. (without timer)	SKC Ltd. Cat. No. (with timer)
AirLite PumpΔ includes 3 AA alkaline batteries and screwdriver set	110-100	110-100-T	110-100	110-100-T
Single Pump Kit-Basic includes pumpΔ as above, 39 inches (1 meter) of Tygon tubing, and 1 Step by Step Guide, in a durable carry case			110-100K	110-100-TK
Single Pump Kit-Dust includes pumpΔ as above, calibration adapter, 39 inches (1 meter) of Tygon tubing, plastic IOM MultiDust Sampler, 5 plastic IOM MultiDust cassettes, and 1 Step by Step Guide, in a durable carry case			110-100KP	110-100-TKP
5-pack Pump Kits				
High Flow Sampling includes 5 pumpsΔ as above and filter cassette holders, in a hard-sided case	110-100K5	110-100-TK5		
High/Low Flow Sampling includes 5 pumpsΔ as above, filter cassette holders, All-in-One adjustable tube holders, and Type A protective tube covers, in a hard-sided case	110-100K5D	110-100-TK5D		
5-pack Pump Kit-Dust includes 5 each: pumpsΔ as above, plastic IOM MultiDust Samplers, 39-inch (1 meter) lengths of Tygon tubing; 15 plastic IOM MultiDust cassettes; 1 calibration adapter; and 3 Step by Step Guides, in a durable carry case			110-100K5P	110-100-TK5P

Accessories	Cat. No.	Qty.
Filter Cassette Holder, accommodates two or three-piece 25 or 37-mm cassettes with or without a cyclone, clips to a worker's collar, *see p. 114*	225-1	ea
Medium Flow chek-mate Flowmeter, 0.5 to 5 L/min, includes 9-volt battery, available with NIST, UK, or ISO standard traceable calibration certificate; *see details on pages 38-39*		

‡ *Flows from 5 to 500 ml/min require the Low Flow Adapter Kit. See page 36.* ** *US Patent No. 6,741,056*
Δ *Not intrinsically safe* * *Use of rechargeable 1.5-volt AA batteries will yield half the run time.*

AirLite requires 1/4-inch ID tubing; see page 45.

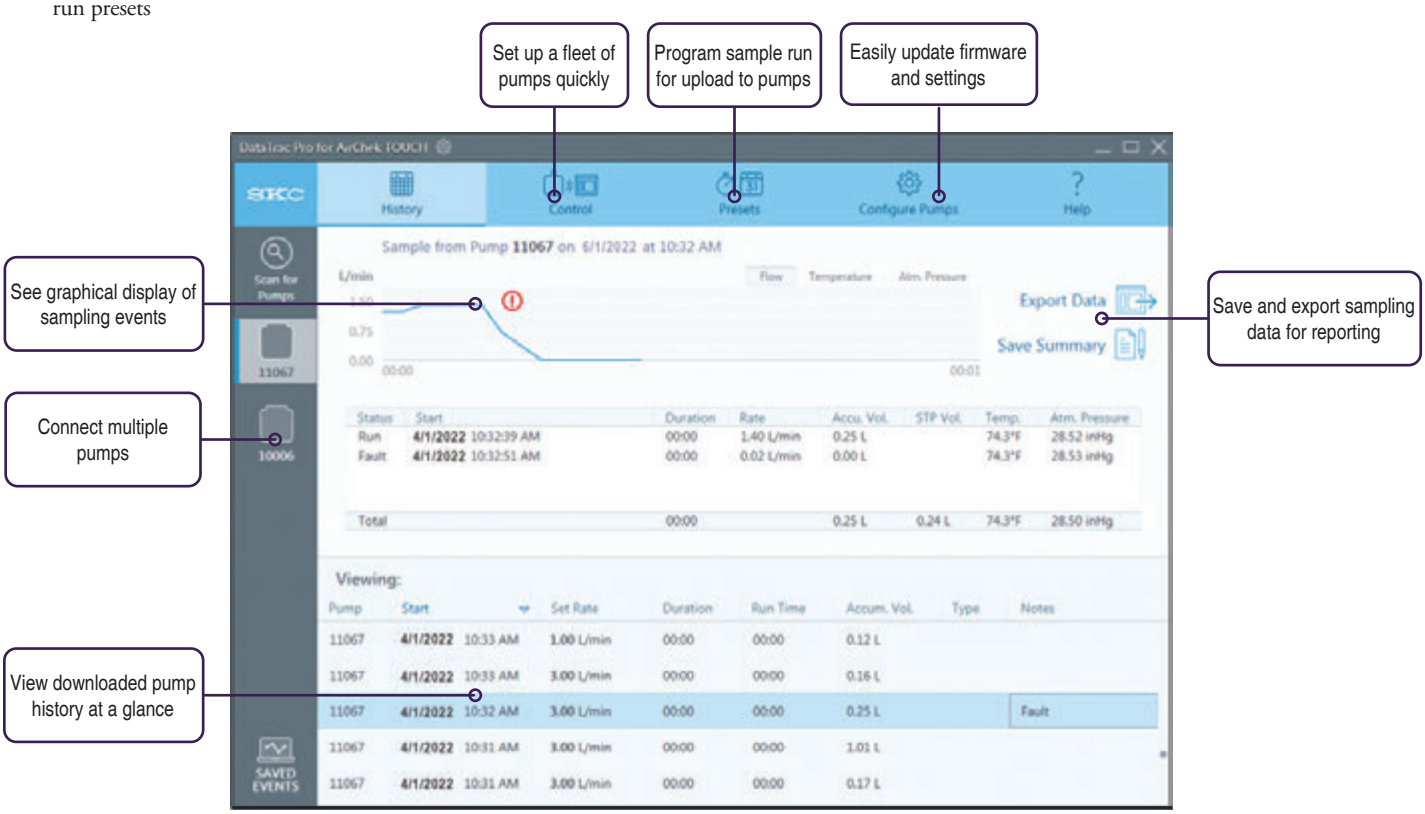
See SKC BestChek Asbestos Cassettes on page 102. Vapour and Dust/Vapour pump kits are also available. Visit skcltd.com!

DataTracPro PC Software for SKC AirChek TOUCH

ADVANTAGES

- ☑ Time saving
- ☑ Easy to use
- ☑ Pump history at your fingertips
- ☑ Create convenient sample run presets

DataTrac® Pro Software is a time-saving pump and data management accessory for your AirChek TOUCH sample pumps. Use DataTrac Pro's intuitive tabs to access/manage pump history, control/monitor pump operation, program sample run presets, and configure pump settings for your applications. *See pages 16 and 18 for more information on the AirChek TOUCH pump.*



DataTrac Pro for AirChek TOUCH

Hardware Accessory Kit includes e-Cradle, single power supply, and USB cable for connection to PC, *required for free software download and use of DataTrac Pro for AirChek TOUCH Software.*
See skcinc.com/DataTracPro for system/hardware specifications.

Cat. No. 877-93

Easy cradle and USB connection to PC

PC Software for Pocket Pump TOUCH and AirChek CONNECT

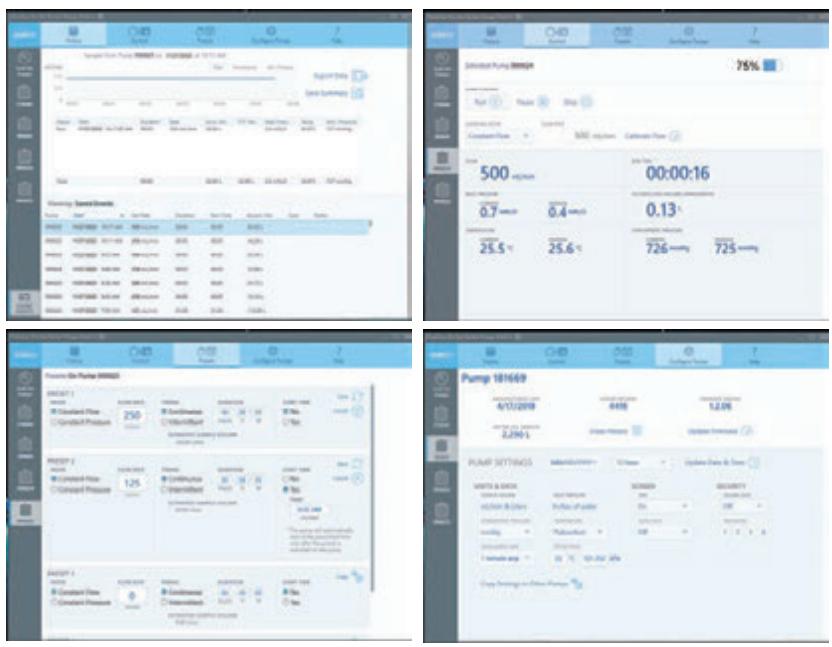
Save time managing your fleet of Bluetooth-connected SKC sample pumps and sampling data with DataTrac Pro Software. Intuitive tabs allow you to access and export pump history, control/monitor pump operation, program sample run presets, and configure pump settings for your applications from your PC. *See pages 10-11, 16, and 19 for more on Pocket Pump TOUCH and AirChek Connect pumps.*

DataTrac Pro for Bluetooth-connected Pumps

USB Bluetooth Adapter *to be installed in USB port on PC, required for free software download and use of DataTrac Pro Software. See skcinc.com/DataTracPro for system/hardware specifications.*

Cat. No. 877-94

Convenient Bluetooth connection to PC with adapter



SKC SmartWave

Mobile App for Pocket Pump TOUCH and AirChek CONNECT

Monitor one or more Pocket Pump TOUCH and AirChek Connect sample pumps with your iOS or Android tablets and phones using Bluetooth low-energy connectivity. *See pages 10-11, 16, and 19 for pump information.*

- **Check in-range pump status**
- **Monitor run time parameters**
- **Set flow and operate sample runs**
- **Spot pump fault status**
- **Select display units and name pumps**
- **Use with the pump's Secure Lock feature enabled to prevent unauthorized access to pump**

Learn more about SKC SmartWave at www.skcinc.com/smartwave

SCAN ME

Personal Sample Pump Battery Chargers

SKC PowerFlex Chargers

SKC PowerFlex® battery charging systems provide flexibility for your fleet of NiMH and NiCad-powered SKC personal sample pumps. Pump-specific cables allow connection and charging of batteries in different SKC personal pump models while using one PowerFlex charger! Instead of carrying several bulky wall cubes or charging units, you only need one lightweight charger and the appropriate cables. The 5-station PowerFlex can charge up to three different SKC pump models simultaneously. *See PowerFlex charger ordering (Cat. Nos. 223-1000 and 223-2000 and 223-1000 Series cables) in table at right.*

Ordering a PowerFlex Charger?

Don't forget to order PowerFlex Cables!

5-station PowerFlex Carry Case

Includes padded shoulder strap and compartment for cables. Included with single pump kits. *See page 44.*

Cat. No. 224-903

MORE INFORMATION
skcinc.com

SKC Pump	Pocket Pump TOUCH	Universal	AirChek 52/Sidekick
			
Single Chargers (100-240 V)		 For XR Models: PowerFlex#*** 223-2000 	 For AirChek 52: PowerFlex#*** 223-2000 
Cat. No.	Single Charger 220-300 (US plug) or 220-300A (multi plug)	For ATEX (MTX) models: 223-203A	For Sidekick: 223-203A
Multi-station Chargers (100-240 V)		 For XR Models: PowerFlex#*** 223-1000 	 For AirChek 52: PowerFlex#*** 223-1000 
Cat. No.	Multi-port USB Hub 220-400 *Requires single charger cables* P75739	For ATEX (MTX) models: 223-103A	For Sidekick: 223-103A
Required PowerFlex Cable(s)			
Cat. No.	N/A	For XR Models: 223-1002#	For AirChek 52: 223-1004#
Replacement Batteries†	P76303 (Li-Ion)‡	For XR Models: P21661MH (NiMH)# For ATEX (MTX) models: P22419MTX	For AirChek 52: P78011AMH (NiMH)# For Std. Sidekick: P78050MH For Dlx. & Int. Sidekick: P78051MTX
Cat. No.			
Battery Eliminators for Line Operation Cat. No.	220-300 (US plug) or 220-300A (multi plug)	223-325 (115 V)# 223-325B (230 V)# 223-305C--UK Plug 223-305B--Euro Plug	For AirChek 52: 223-300 (115 V)# 223-300C--UK Plug 223-300B--Euro Plug

 # For use with US-produced pump models only; not compatible with EX or ATEX models

‡ Li-Ion batteries are subject to special shipping regulations.

† Replacing batteries with non-approved battery packs voids any warranty and intrinsic safety approvals.

*** CE marked when used with the power supply provided by SKC; power supply is UL and cUL Listed for electrical safety*

AirChek TOUCH, Essential+, and Connect	AirChek 3000	AirChek XR5000	Leland Legacy
			
*Choose charging cradles:** **Lite Cradle (non-chainable) for AirChek Essential+** **220-850****  **Standard Cradle (chainable)** **220-800****  **e-Cradle (chainable with 220-800)** *(for use with AirChek TOUCH only)* **220-900** 	 **223-260A**	 **223-241**	 **223-241**
*Choose a power supply:** **Single for Standard and Lite** For use with 1 cradle **220-600**  **Multi for Standard and e-Cradle** For use with 2 to 5 chained cradles **220-700**  **Multi with Splitter for Lite** For use with 1 to 5 Lite cradles **220-851** 	 **223-109A**	 **Take Charge 5** **223-441**Δ	 **Take Charge 5** **223-441**Δ
N/A	**N/A**	**N/A**	**N/A**
P75718 (Li-Ion)‡	**P21030**	**P85004A (4-cell Li-Ion)**‡ **P85002A (2-cell Li-Ion)**‡	**P75692A (Li-Ion)**‡
See cradles and power supplies (above)	**223-330C - UK Plug** **223-330B - Euro Plug**	**223-241**	**223-241**

‡ *Li-Ion batteries are subject to special shipping regulations.*
* *Cradle and power supply required; each sold separately*
** *Compatible with previous AirChek Essential Pump models*
Δ *Not CE/UKCA marked*

ABOUT

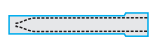
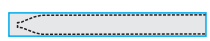
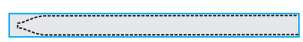
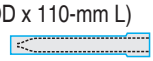
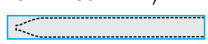
Li-Ion Battery Shipment
Rechargeable lithium-ion batteries for use with SKC sample pumps are subject to special shipping regulations. *For more information, visit skcinc.com.*

• TECH TIPS •

- Li-Ion is a "clean" system and only takes what it can absorb; therefore, Li-Ion batteries do not require the continuous "trickle" charge that other battery chemistries need. SKC Li-Ion battery chargers apply a trickle charge to fully charged batteries only when the charger senses a drop in battery voltage (e.g., self-discharge). Once full battery voltage is restored, the trickle charge shuts off.
- SKC pumps powered by Li-Ion battery can be operated indefinitely while charging.

Single-tube Low Flow Sampling Accessories

Build a **single-tube low flow sampling train** in three easy steps: (1) select a pump, (2) select the pump-specific tube holder, and (3) select a protective tube cover (based on sorbent tube size, *see Sorbent Tube Selection Guide on pages 48-52*). Tube holders used with Pocket Pump TOUCH and other dedicated low flow pumps are non-adjustable and supplied with a tube cover; select the appropriate model based on size of sorbent tube used.

Step 1	Step 2	Step 3	
Pumps	**Tube Holders**	**Tube Covers Only**	
AirChek 52/Sidekick AirChek XR5000 AirChek TOUCH AirChek Connect AirChek Essential+ AirLite AirChek 3000	**All-in-One Low Flow/Single Adjustable Tube Holder with built-in CPC** **Cat. No. 224-27** ***See convenient Low Flow Adapter Kit below.*** 	**A** (6-mm OD x 70-mm L) **Cat. No. 224-29A**  **B** (7 or 8-mm OD x 110-mm L) **Cat. No. 224-29B**  **C** (10-mm OD x 150-mm L) **Cat. No. 224-29C**  **D** (10-mm OD x 220-mm L) **Cat. No. 224-29D**  *Select desired tube from the Sorbent Tube Selection Guide on pp. 48-52. Match the letter indicated in the Tube Cover column in the Guide to the letter above.* ***See page 37 for specialty tube holders.***	
Universal Series	**Adjustable Low Flow Tube Holder** **Cat. No. 224-26-01** 		
Pocket Pump TOUCH	**Tube Holder (non-adjustable) with cover** **Cat. No. 222-3-1 (A)** ***with*** **A** (6-mm OD x 70-mm L)  **222-3L-1 (B)** ***with*** **B** (7 or 8-mm OD x 110-mm L)  **222-3XL-1 (C)** ***with*** **C** (10-mm OD x 150-mm L)  **222-3XD-1 (D)** ***with*** **D** (10-mm OD x 220-mm L)  		

Low Flow Adapter Kit

The SKC Low Flow Adapter Kit includes an All-in-One Low Flow Adjustable Tube Holder with built-in CPC and Type A Tube Cover. It is now even easier to adapt high flow SKC pumps for low flow applications.

Cat. No. 210-500

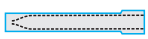
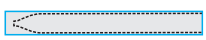
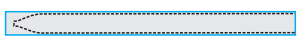
SKC Tube Breaker

The SKC Tube Breaker opens 6, 7, 8, and 10-mm OD glass sorbent tubes cleanly and safely. This heavy-duty breaker is constructed of sturdy stainless steel with cap that rotates to expose the desired size opener and to retain glass tips to be discarded.

Cat. No. 226-03-055

Multiple-tube Low Flow Sampling Accessories

Build a **multiple-tube low flow sampling train** in four easy steps: (1) select a pump, (2) select the constant pressure controller (if pump requires it), (3) select an adjustable multiple-tube holder, and (4) select protective tube covers (based on sorbent tube size, *see Sorbent Tube Selection Guide on pages 48-52*).

Step 1	Step 2	Step 3	Step 4	
Pumps	**Constant Pressure Controller (CPC)**	**Adjustable Multiple-tube Low Flow Holders**	**Tube Covers Only**	
AirChek 52/Sidekick AirChek XR5000 AirChek Connect AirChek Essential+ AirChek TOUCH AirChek 3000	**CPC** **Cat. No. 224-26-CPC** 	**2 tubes (Dual)** **Cat. No. 224-26-02** 	**A** (6-mm OD x 70-mm L) **Cat. No. 224-29A** 	
Pocket Pump TOUCH AirLite	**CPC** **Cat. No. 224-26CPC-10** 	**3 tubes (Tri)** **Cat. No. 224-26-03** 	**B** (7 or 8-mm OD x 110-mm L) **Cat. No. 224-29B** 	
Universal Series	**None required** (pump has built-in regulator)	**4 tubes (Quad)** **Cat. No. 224-26-04** 	**C** (10-mm OD x 150-mm L) **Cat. No. 224-29C**  **D** (10-mm OD x 220-mm L) **Cat. No. 224-29D**  *Select desired tube from the Sorbent Tube Selection Guide on pp. 48-52. Match the letter indicated in the Tube Cover column in the Guide to the letter above.* ***See below for specialty tube holders.***	

Specialty Tube Holders

For Sorbent Tube Sampling ≥ 1 L/min Without Low Flow Accessories

OVS Tube Holder

The OVS Tube Holder accommodates the 13-mm diameter of SKC OVS Tubes.

OVS Tube Holder includes fitting with durable protective cover, 3 feet of tubing, and collar clip. *Do not use an Adjustable Low Flow Holder.*
Cat. No. 224-29V

Low-volume PUF Tube Holder

The Low-volume PUF Tube Holder accommodates the 22-mm diameter and 100-mm length of SKC Low-volume PUF Tubes.

Low-volume PUF Tube Holder includes fitting with durable protective cover, 3 feet of tubing, and collar clip. *Do not use an Adjustable Low Flow Holder.*
Cat. No. 224-29P

16-mm Diameter Tube Holder

Accommodates the 16-mm diameter of SKC Sorbent Tubes Cat. Nos. 226-142 and 226-177.

16-mm Diameter Tube Holder includes fitting with durable protective cover, 3 feet of tubing, and collar clip. *Do not use an Adjustable Low Flow Holder.*
Cat. No. 224-29H

chek-mate FLOWMETER

- **Three models available**
  - High Flow: 5 to 30 L/min
  - Medium Flow: 0.50 to 5 L/min
  - Low Flow: 20 to 500 ml/min
- **CalChek capability in medium and high flow models provides direct communication to CalChek-ready pumps for automatic flow rate verification**
- **Certified volumetric accuracy is 1% of reading for ranges of 5 to 30 L/min (high flow), 750 to 5000 ml/min (medium flow), and 50 to 500 ml/min (low flow)**
  - 2.5% accuracy outside of above ranges
- **Average flow display feature**
- **Built-in sensors adjust for changes in temperature and atmospheric pressure**
- **Calibrated against NIST, UK, or ISO national standards in an ISO 17025-accredited laboratory**
  - NIST, UK, or ISO standard traceable calibration certificate supplied
- **Sleek design for flow rate verification anywhere, anytime**
  - 7.1 x 3.3 x 1.3 inches (18 x 8.3 x 3.3 cm)
  - Models under 9 ounces (255 grams)
  - Compact for handheld use
- **9-volt alkaline battery operation**
  - Auto shut-off feature
- **No moving parts, use in any orientation**
- **Internal filter protects components from dust**

LEARN MORE

Certifications
CE, UKCA

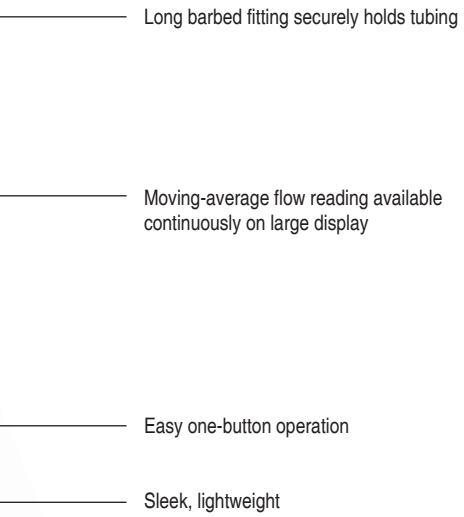
Low flow chek-mate shown with Pocket Pump TOUCH sample pump

ANNUAL CALIBRATION?
SKC CAL LAB
See pages 42-43

NEWS!

ASTM International has released ASTM D5337-23: *Standard Practice for Setting and Verifying the Flow Rate of Personal Sampling Pumps*. The practice includes procedures for using "working standard" flowmeters with traceable calibration such as the SKC chek-mate. More information is available in ASTM D5337-23 at *www.astm.org/d5337-23.html* or from SKC at *www.skcinc.com/tech-note-1919-calibrator-classification*.

Accurate Differential Pressure Flowmeter with Traceable Calibration



CalChek®

Fast, Easy Automatic Flow Rate Verification

- **No manual adjustments needed**
- **Verify flow at a single flow point or calibrate across a range of flows**
- **Document flow rate verification with DataTrac Software and your PC**

The patented* CalChek feature allows direct communication between Medium Flow and High Flow chek-mate Flowmeters and CalChek-ready AirChek TOUCH, AirChek 3000, and Leland Legacy sample pumps. With CalChek Cable (*below*), connect chek-mate directly to the AirChek 3000 or Leland Legacy pump or to a Standard or e-Cradle containing an AirChek TOUCH pump, set pump flow, and let CalChek take it from there.

See required cable and dampener accessories below!

** US Patent Nos. 6,227,031 and 6,363,769*

Description	Flow Range	Cat. No.	Qty.
High Flow chek-mate Flowmeter with CalChek Feature includes a 9-volt alkaline battery (*CalChek Cable sold separately; see below. Flowmeter hosetail is a larger diameter for higher flow pumps.*)	**5 to 30 L/min**		
with UK standard traceable calibration certificate		**375-50300**	**ea**
with NIST standard traceable calibration certificate		**375-50300N**	**ea**
with ISO standard traceable calibration certificate		**375-50300S**	**ea**
Kit with flowmeter and pulsation dampener Cat. No. 375-150			
with NIST standard traceable calibration certificate		**375-50300-KN**	**ea**
with ISO standard traceable calibration certificate		**375-50300-KNS**	**ea**
Medium Flow chek-mate Flowmeter with CalChek Feature includes a 9-volt alkaline battery *(CalChek Cable sold separately; see below.)*	**0.50 to 5 L/min**		
with UK standard traceable calibration certificate		**375-0550**	**ea**
with NIST standard traceable calibration certificate		**375-0550N**	**ea**
with ISO standard traceable calibration certificate		**375-0550S**	**ea**
Kit with flowmeter and pulsation dampener Cat. No. 375-100			
with NIST standard traceable calibration certificate		**375-0550-KN**	**ea**
with ISO standard traceable calibration certificate		**375-0550-KNS**	**ea**
Low Flow chek-mate Flowmeter includes a 9-volt alkaline battery	**20 to 500 ml/min**		
with UK standard traceable calibration certificate		**375-00205**	**ea**
with NIST standard traceable calibration certificate		**375-00205N**	**ea**
with ISO standard traceable calibration certificate		**375-00205S**	**ea**
Accessories			
CalChek Communication Cable, *required for CalChek automatic flow rate verification of AirChek TOUCH (also requires Standard Cradle or e-Cradle), AirChek 3000, and Leland Legacy Sample Pumps using chek-mate Flowmeters*		**375-200**	**ea**
Calibration Service, *see pages 42-43 for details*			
Pulsation Dampeners, *required for use with the following (also available in kits; see above)*			
chek-mate Flowmeter Cat. Nos. 375-0550N, 375-0550, and 375-0550S for CalChek full calibration of AirChek TOUCH and AirChek 3000 pumps		**375-100**	**ea**
chek-mate Flowmeter Cat. Nos. 375-50300N, 375-50300, and 375-50300S for flow rate verification of high flow pumps and CalChek verification of Leland Legacy		**375-150**	**ea**

Soap Film Flowmeters

SKC offers two models of classic soap film flowmeters:

- **Model 303** provides flow rate verification for low flow pumps typically used for sorbent tube sampling
- **Model 311** provides flow rate verification for higher flow pumps typically used for filter sampling

Both flowmeters are calibrated to within ± 2% of the volumes marked on the flowmeter and are supplied with a certificate of calibration. The smaller Model 303 offers a convenient carry case for easy transport.

Laboratory Film Flowmeter
Cat. No. 311-1000

Description	Meas. Range (ml/min)	Cat. No.	Qty.
Laboratory Film Flowmeter Kit includes precision glass buret, film solution, operating instructions, adapter for vacuum or pressure, aluminum tripod stand, and calibration certificate	300 to 3000	**311-1000**	**ea**
Portable Field Flowmeter Kit includes precision glass buret, film solution, operating instructions, carry case, and calibration certificate	5 to 500	**303-**	**ea**
Flow Rate Verification Accessories			
Film Solution, 1 pint (473 ml)		**302-4011**	**ea**

Calibration Adapters

Use the guide below to find the adapter or jar required for flow rate verification.

For SKC sampler	You need
Disposable PPIs	**Disposable PPI Calibration Adapter** **Cat. No. 225-389** 
Reusable PPIs GS Cyclones Low-volume PUF Tubes	**Calibration Jar, Standard** **Cat. No. 225-111** 
Devices up to 8-inch length x 3.25-inch diameter	**Calibration Jar, Large** **Cat. No. 225-112** 
Aluminum Cyclones (25 and 37 mm)	**Aluminum Cyclone Calibration Adapter** **Cat. No. 225-01-03** 
Button Sampler IFV Pro Sampler	**Button Sampler/IFV Pro Sampler Calibration Adapter** **Cat. No. 225-361** 
Small diameter sampling tubes	**Tubing Adapter for Small Sample Tubes** **Cat. No. 717-511** 

For SKC sampler	You need
IMPACT Sampler	**IMPACT Sampler Calibration Adapter** **Cat. No. 225-394** 
IOM Sampler	**IOM Calibration Adapter** **Cat. No. 391-01** 
PEM Sampler	**PEM Calibration Adapter** **Cat. No. 761-202** 
PMI Sampler	**PMI Calibration Adapter** **Cat. No. 225-358** 
BioStage Impactor	**BioStage Calibration Adapter** **Cat. No. P33100** 
Cowled Asbestos Sampling Head	**Cowled Asbestos Sampling Head Calibration Adapter** **Cat. No. 391-05** 

See page 45 for tubing or visit skcinc.com

Rotameters

Economical Field Rotameters

320 Series

- Easy-to-read scales
- Ball type
- Provisions for panel mounting
- Lightweight, rugged, and portable

Measuring Range (L/min)	Scale (Inches)	Accuracy* ±	Cat. No.	Qty.
0.05 to 0.5	2	5%	**320-2A05**	**ea**
0.1 to 1†	4	3%	**320-4A1**	**ea**
0.4 to 5	4	3%	**320-4A5**	**ea**
2 to 20	4	3%	**320-4A20L**	**ea**
4 to 50	4	3%	**320-440**	**ea**
3 to 30	4	3%	**320-530**	**ea**
3 to 30	4	3%	**320-100**	**ea**

* *Full scale* † *Product scale is marked in CCM (cc/min), which is equivalent to ml/min.*

Pneumatic Test Kit

The Pneumatic Test Kit is an all-in-one kit for testing sample pump flow range compensation. The kit includes a rotameter (1 to 5 L/min), valve, and magnehelic gauge (0 to 80 inches water back pressure). Mounted in a heavy-duty casing.

Cat. No. 224-6580

Standard Rotameters

393 Series

- 100-mm scale
- Float type
- Steel base plate/stand
- Standards-traceable certificate available; contact SKC

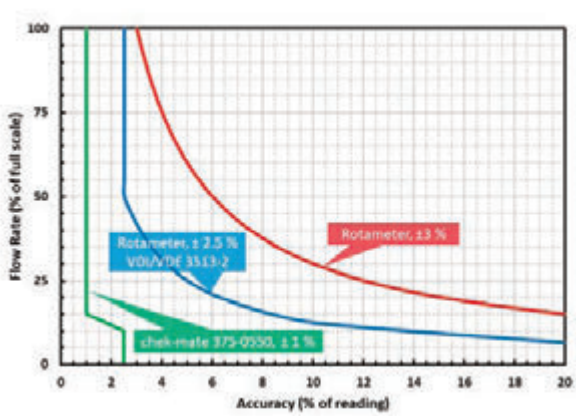
Measuring Range (L/min)Δ	Scale (mm)	Accuracy ±	Cat. No.	Qty.
0.02 to 0.25	100	2.5%	**393-002025**	**ea**
0.3 to 3.4	100	2.5%**	**393-0334**	**ea**
0.6 to 5	100	2.5%**	**393-0650**	**ea**
1 to 13	100	2.5%**	**393-1130**	**ea**
2 to 26	100	2.5%**	**393-2260**	**ea**
Accessories				
Calibration Adapter, for hands-free IOM flow verification			**391-01**	**ea**
Cowled Asbestos Sampling Head Calibration Adapter			**391-05**	**ea**

** *Full scale-VDI/VDE Standard 3513/2:2008* Δ *Calibrated at 68 F (20 C) and 1 atmosphere*

Need Annual Calibration?

The ISO-IEC 17025:2017-accredited SKC CAL Lab will keep your flow rate measurement and verification devices in optimum condition. Learn more on pages 42-43.

Standard and Field Rotameter Accuracy vs. chek-mate Flowmeter



For the chek-mate Flowmeter
see pages 38-39

SKC CAL

Keeping your gas flow devices in top condition and verified to a primary standard on an annual basis is essential to the integrity of exposure assessment programs and compliance with quality management systems. The ultimate goal is to keep workers healthy and safe. The SKC CAL Labs are where it starts!

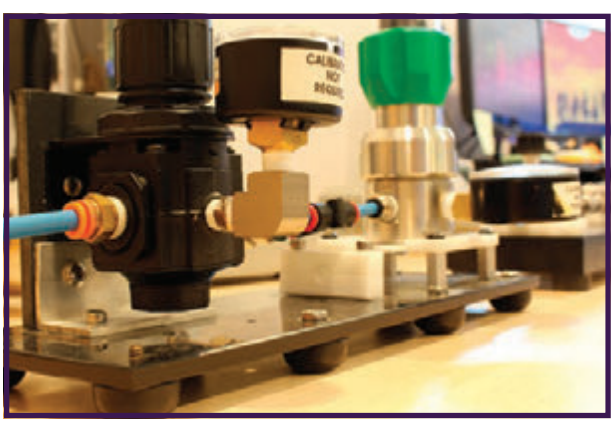
- **ISO/IEC 17025:2017-accredited laboratory**
- **Traceable standard piston provers and other instruments used in accordance with ISO/IEC 17025-2017**
- **Controlled environmental conditions**
- **Certified calibration staff**
- **Calibration services available for a range of popular flowmeters*†**
  - Contact SKC or your distributor for details
- **Fast service**
- **Reasonable prices**
- **SKC — A name you have trusted for over 60 years**

* *The DC-Lite manufacturer will no longer service DC-Lite units. If the units do not pass calibration, they will be considered unserviceable.*

† *If determined to be out of specification or requiring additional repairs, Defender flowmeters may need to be returned to the manufacturer for factory service.*

Confidence in Calibration of Flowmeters

Highly trained and certified calibration technicians provide fast service.



Well-equipped ISO/IEC 17025:2017-accredited laboratory ensures accuracy.

SKC CAL is confidence in calibration!

Contact SKC or your distributor for more information about local accreditations.

Gas Flow Device Calibration and Certification Services

Pump Sampling Accessories

Soft-sided nylon case Cat. No. 224-903 standard in single pump kits

Protective and noise-reducing pump pouches Cat. Nos. 224-95A, 224-96A, and 224-96C

Noise-reducing pump pouch Cat. No. 224-89

Hard-sided case Cat. No. 224-901 alternative case for single pump kits

Hard-sided case Cat. No. 224-905

Hard-sided case Cat. No. 224-912

Tripod Stand

Sturdy stand telescopes to 5 feet and holds sampling media securely for breathing zone-level measurements. Ideal for asbestos and bioaerosol sampling. *See page 102 for BestChek Asbestos Cassettes and pumps and pages 134-135 for the BioStage Viable Cascade Impactor. Stand does not hold a pump.*

Description	Cat. No.	Qty.
Tripod, for cassette or BioStage Impactor	**228-506**	**ea**

Pump Cases and Protective Pouches

Description		Cat. No.	Qty.
5-pack Pump Kit Carry Cases, hard-sided, watertight, airtight, dustproof, and crushproof, equipped with foam for complete equipment protection			
AirChek TOUCH, Connect, or Essential+, on wheels for easy transport		**224-914**	**ea**
AirChek 3000, AirChek 52/Sidekick, XR5000, or AirLite Deluxe Kit, on wheels for easy transport		**224-910**	**ea**
Leland Legacy, on wheels for easy transport		**224-905**	**ea**
Pocket Pump TOUCH		**224-915**	**ea**
Universal Series		**224-908**	**ea**
Single Pump Kit Carry Cases, for AirChek Series, Pocket Pump TOUCH, and Universal			
Hard-sided *(shown at left)*		**224-901**	**ea**
Nylon with shoulder strap *(shown at left)*, also used for 5-station PowerFlex		**224-903**	**ea**
Single Pump Kit Carry Case, for Leland Legacy			
Hard-sided		**224-912**	**ea**
Protective Pump Pouches, for personal sampling, designed for personal comfort with adjustable waist belt, and shoulder strap			
Universal	**Black**	**224-87**	**ea**
	Red *(shown at left)*	**224-95A**	**ea**
AirChek 3000, AirChek 52/ Sidekick or XR5000‡	**Black**	**224-88**	**ea**
	Red *(shown at left)*	**224-96A**	**ea**
AirLite	**Black, with belt loop (no shoulder or waist strap)**	**224-902**	**ea**
AirChek TOUCH, Connect, or Essential+	**Black**	**224-911**	**ea**
Noise-reducing Pump Pouches, reduce noise level from 62.5 to 55 dBA*			
AirChek 3000, XR5000 (4-cell) or AirChek 52/Sidekick	**Black *(shown at left)***	**224-96C**	**ea**
AirChek XR5000 (2-cell)	**Black**	**224-913**	**ea**
Leland Legacy, reduces noise level from 62.5 to 52 dBΔ	**Black**	**224-89**	**ea**
Waist Belt, extends up to 48 inches		**224-12**	**ea**

‡ *High-power Li-Ion model only*

* *Measured at 39 inches (1 meter) from an AirChek 52 pump running at 2 L/min with 37-mm, 0.8-µm MCE cassette*

Δ *Measured at 39 inches (1 meter) from a Leland Legacy pump operating at 10 L/min without media*

Tubing for Air Sampling

Tygon

Description	Applications	Diameter Inches (mm) ID	Diameter Inches (mm) OD	Cat. No.	Length in Feet	Qty.
Tygon	Sampling trains	3/16 (4.76)	5/16 (7.94)	**225-1346**	**10**	**ea**
Tygon	Sampling trains; fits over impinger sidearm, impinger inlet, filter cassette outlet, or Luer adapter	1/4 (6.35)	3/8 (9.53)	**225-13-4A**	**3.3**	**ea**
				225-13-4	**10**	**ea**
				225-1345	**50**	**ea**
Tygon	Sampling trains; fits higher flow rate pumps and flowmeters with larger diameter inlets	3/8 (9.53)	1/2 (12.7)	**225-1351**	**10**	**ea**
				225-1352	**50**	**ea**
Tygon	For verifying DPS and DCS system flow rate	5/16 (7.94)	9/16 (14.29)	**225-1349**	**10**	**ea**

Latex Rubber

Description	Applications	Diameter Inches (mm) ID	Diameter Inches (mm) OD	Cat. No.	Length in Feet	Qty.
Latex Rubber, black	Sampling trains	3/16 (4.76)	5/16 (7.94)	**226-03-003**	**12**	**ea**
Latex Rubber, black	Sampling trains; fits over impinger sidearm, impinger inlet, filter cassette outlet, or Luer adapter	1/4 (6.35)	3/8 (9.53)	**226-03-004**	**12**	**ea**
Latex Rubber, amber	Sampling trains; fits over impinger sidearm, impinger inlet, filter cassette outlet, or Luer adapter	1/4 (6.35)	3/8 (9.53)	**225-1347**	**10**	**ea**

Polyurethane

Description	Applications	Diameter Inches (mm) ID	Diameter Inches (mm) OD	Cat. No.	Length in Feet	Qty.
Polyurethane, reinforced to prevent kinking	Sampling trains; fits over impinger sidearm, impinger inlet, filter cassette outlet, or Luer adapter	1/4 (6.35)	15/32 (11.9)	**225-1350**	**10**	**ea**

PTFE†

Description	Applications	Diameter Inches (mm) ID	Diameter Inches (mm) OD	Cat. No.	Length in Feet	Qty.
PTFE	Inert for bag sampling; fits over bag fitting	3/16 (4.76)	1/4 (6.35)	**231-9-23**	**10**	**ea**
PTFE	Inert for bag sampling; fits inside bag fitting	1/16 (1.59)	1/8 (3.18)	**231-9-21**	**10**	**ea**
PTFE	Inert for bag sampling; fits Vac-U-Chamber sample inlet	1/4 (6.35)	5/16 (7.94)	**231-937**	**10**	**ea**
				231-924	**50**	**ea**

† *PTFE tubing is not suitable for particulate sampling because static effect can cause sample loss in the tubing.*

Tubing Accessories

Tubing Accessories	Cat. No.	Qty.
PVC Adapters, Luer taper connects to 1/4-inch ID tubing 	**225-13-2**	**10**
	225-132A	**250**
Spring Tubing Support, for use with 5/16-inch OD flexible tubing to prevent kinking	**225-1348**	**5**
Tubing, Collar Clip, and Cable Ties	**225-13-8**	**ea**
Collar Clip and Cable Ties only	**225-13-6**	**10**

SKC QUALITY SORBENT TUBES

SKC was the first to bring the NIOSH sorbent tube design to the commercial market over 50 years ago.

SKC is the leader in sorbent tube research to make quality sorbent tubes available for protecting workers and public health.

Over 100 SKC Sorbent Tubes are available for validated methods and specialty applications. SKC also manufactures custom sorbent tubes to your specifications.

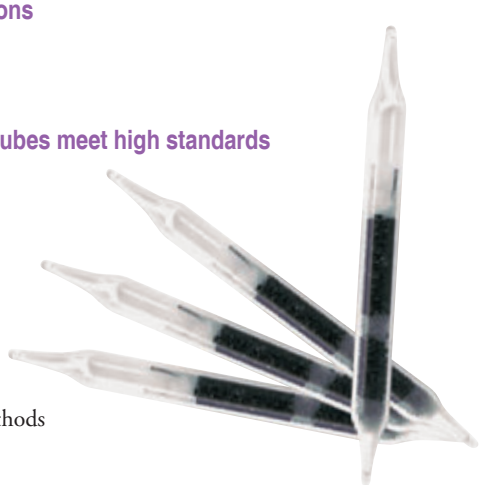
Look for the SKC name when choosing sorbent tubes. SKC brings to you expertise, the support of experienced scientists, low-background sorbents, quality manufacturing, QC data online, repeatable performance, and the media and instruments you need for accurate sampling.

SKC Sorbent Tubes — made for NIOSH, OSHA, EPA, ASTM, and HSE methods.

Over 50 Years of Quality Sorbent Tubes

PROFESSIONALS' #1 CHOICE

- **Meet NIOSH, OSHA, ASTM, EPA, and HSE specifications**
  - Your single source for US and UK methods
- **Made with high-quality, low-background sorbents**
- **SKC thorough quality control ensures sorbents and tubes meet high standards**
  - Accurate sorbent weights
  - Consistent method-specified mesh size and separators
  - Uniform back pressure
  - Accurate, repeatable results
- **Large batch production of Anasorb CSC Lot 2022 charcoal to ensure availability for many years**
- **Validation of reliability**
  - Specified in OSHA, NIOSH, ASTM, EPA, and HSE methods
  - Used by health and safety professionals around the world for compliance and consulting
- **Sorbent background certification available online** *(see below)*
- **Technical support from scientists**
- **Hundreds of sorbent tubes for standard and specialty applications delivered quickly from stock**



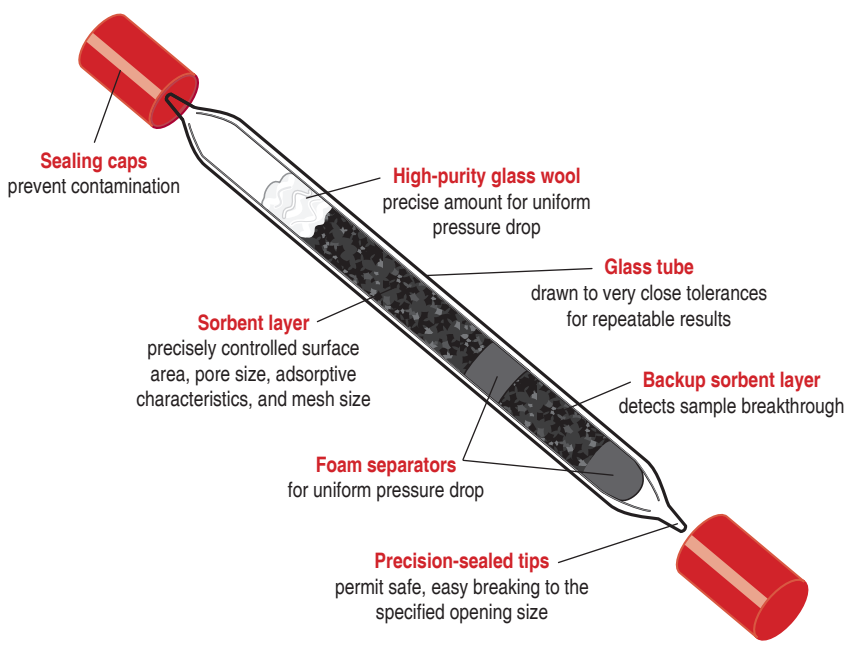
Anasorb®

A Trademark of Quality

In 1973, SKC made the first commercial sorbent tube. Since then, SKC has led advancements in sorbent tube technology. To more easily identify SKC proprietary sorbents in air sampling methods, the registered trademark "Anasorb" is used for SKC proprietary sorbents of all types.

Sorbent Equivalencies

Anasorb	Equivalent Sorbent
708	Chromosorb 108
727	Chromosorb 106
C300	Hydrar, Carulite
CSC	None
747	None
GCB1	Carbotrap B (20/40) Carbopack B (60/80)
GCB2	Carbotrap C (20/40) Carbopack C (60/80)



For Sample Pumps
see pages 7-23

Seeing is Believing!

Sorbent background certificates are available.
Visit **skcinc.com**.

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Visit skcinc.com

Sorbent Tube Selection Guide

To select a tube for a specific compound, refer to the SKC Sampling Guide on catalog pages 172-247 or search the online Sampling Guides at skcinc.com for methods and required sorbent tubes.

ADVANTAGES

- ☑ **Over 50 years of proven performance!** Produced the first commercial sorbent tube
- ☑ **Validation and reliability** SKC tubes are specified and used by OSHA, NIOSH, EPA, ASTM, HSE, and health and safety professionals around the globe for compliance and consulting.
- ☑ **High-quality, low-background sorbents**
- ☑ **Consistent method-specified mesh size and separators** maintain uniform back pressure and breakthrough volumes.
- ☑ **Large batch production** Anasorb CSC Lot 2022 charcoal will be available for many years.
- ☑ **Sorbent background certification available online**
- ☑ **Backup sorbent layer** for breakthrough indication
- ☑ **Technical backup** SKC technical experts provide fast, accurate answers to your questions.
- ☑ **Easy-off "hat" caps on specialty tubes**

Cat. No.*	Sorbent *(treatment)*	Size (mm) OD x L	Sections	Sorbent (mg)	Ends	Separators	Tube Cover	Qty.
226-01 226-01A 226-01-BULK	Anasorb CSC, Coconut Charcoal Anasorb CSC, Coconut Charcoal Anasorb CSC, Coconut Charcoal	6 x 70 6 x 70 6 x 70	2 2 2	100/50 100/50 100/50	GS GS GS	F F W F F W F F W	A A A	50 10 1000 Save
226-01GWS	Anasorb CSC, Coconut Charcoal	6 x 70	2	100/50	GS	W W W	A	50
226-09 226-09-BULK	Anasorb CSC, Coconut Charcoal Anasorb CSC, Coconut Charcoal	8 x 110 8 x 110	2 2	400/200 400/200	GS GS	F W W F W W	B B	50 1000 Save
226-09-02	Anasorb CSC, Coconut Charcoal	8 x 150	3	350/350/350	GS	W W W W	C	50
226-10	Silica Gel	6 x 70	2	150/75	GS	F W W	A	50
226-10-03	Silica Gel *(specially cleaned)*	7 x 110	2	400/200	GS	W W G W	B	50
226-10-04	Silica Gel	8 x 110	2	300/150	GS	W W W	B	50
226-10-06	Silica Gel *(sulfuric acid)*	7 x 70	2	200/100	GS	W W W	B	50
226-15	Silica Gel	8 x 110	2	520/260	GS	F W W	B	50
226-15GWS	Silica Gel	8 x 110	2	520/260	GS	W W W	B	50
226-16	Anasorb CSC, Coconut Charcoal	10 x 110	2	800/200	GS	F W W	C	50
226-16-02	Anasorb CSC, Coconut Charcoal	10 x 160	2	1800/200	GS	F W W	D	50
226-17-1A	Anasorb C300†	6 x 70	1	200	GS	W W	A	50
226-17-3A	Anasorb C300†	8 x 110	1	500	GS	W W	B	50
226-22	Silica Gel	10 x 110	2	1040/260	GS	F W W	C	50
226-23	XAD-2 *(octanoic acid)*	6 x 70	2	100/50	GS	W W W	A	50
226-25	Anasorb CSC, Coconut Charcoal Anasorb CSC, Coconut Charcoal	8 x 110 8 x 110	1 1	400 200	GS	W W W W	D	50 sets
226-27	XAD-2 *(2-hydroxymethyl piperidine)*	8 x 110	2	450/225	GS	W W W	B	20
226-29	Anasorb 747 *(sulfuric acid)*	8 x 110	2	500/250	GS	W W W	B	50
226-30	XAD-2	7 x 70	2	80/40	GS	W W W	B	50
226-3002A	XAD-2 XAD-2	10 x 110 10 x 110	1 1	600 300	GS	W W W W	D	10 sets
226-30-03	XAD-2	8 x 110	2	100/30	GS	W W W	B	50
226-30-04	XAD-2	8 x 110	2	100/50	GS	W W W	B	50
226-30-05	XAD-2	8 x 110	2	150/75	GS	W W W	B	50
226-30-06	XAD-2	8 x 110	2	400/200	GS	W W W	B	50
226-30-07	XAD-2 *(p-anisidine)*	8 x 110	2	100/50	GS	W W W	B	20
226-30-08	Anasorb 708	6 x 70	1	100	GS	W W	A	50
226-30-16 (OVS) 226-30-16A (OVS)	XAD-2/Glass Fiber filter XAD-2/Glass Fiber filter	13→8 x 75 13→8 x 75	2 2	270/140 270/140	GO GO	F F G T F F G T	V V	10 50 Save
226-30-18	XAD-2 *(naphthylisothiocyanate)*	6 x 70	2	80/40	GS	W W W	A	50
226-35	Tenax TA	6 x 70	2	30/15	GS	F W W	A	50
226-35-01	Tenax TA	6 x 70	2	20/10	GO	W W W	A	50
226-35-03	Tenax TA	8 x 110	2	100/50	GS	W W W	B	50
226-35031	Tenax TA	8 x 110	2	100/50	GS	W W W	B	10

* *Some sorbent tubes have a limited shelf-life; contact SKC for details*

† *Anasorb C300 is equivalent to Hydrar and Carulite.*

TUBE ENDS: GS: *Glass Sealed* ***GO:*** *Glass Open*
SEPARATORS: W: *Glass Wool* ***G:*** *Glass Fiber Filter* ***F:*** *Foam* ***T:*** *PTFE Ring*

For compliance sampling, use tubes as specified in a validated sampling method. It is the user's responsibility, employing a suitable method, to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before use. The user should adjust the sampling parameters for specific conditions and evaluate tubes under conditions of use to ensure that the desired results will be obtained.

Sorbent Tube Selection Guide

To select a tube for a specific compound, refer to the SKC Sampling Guide on catalog pages 172-247 or search the online Sampling Guides at skcinc.com for methods and required sorbent tubes.

Cat. No.*	Sorbent *(treatment)*	Size (mm) OD x L	Sections	Sorbent (mg)	Ends	Separators	Tube Cover	Qty.
226-37	Anasorb CSC, Coconut Charcoal Anasorb CSC, Coconut Charcoal	8 x 110 8 x 110	1 1	400 200	GS	F W F W	D	50 sets
226-39	Florisil	6 x 70	2	100/50	GS	W W W	A	50
226-39-02	Florisil	8 x 110	2	400/200	GS	W W W	B	50
226-40A	Molecular Sieve *(triethanolamine)* Oxidizer Molecular Sieve *(triethanolamine)*	7 x 70 7 x 110 7 x 70	1 1 1	400 400 600	GS GS GS	W W W W W W	D	10 sets
226-40-02	Molecular Sieve *(triethanolamine)*	7 x 110	2	400/200	GS	W W W	B	50
226-42	Silica Gel *(sulfuric acid)*	8 x 110	2	200/200	GS	W W W	B	50
226-42-02	Firebrick (gas chrom-R) *(sulfuric acid)*	7 x 70	1	300	GS	W W	B	50
226-44	Drying Tube	6 x 70	1	250	GS	W W	—	50
226-44-02	Drying Tube	10 x 160	1	900	GS	W W	—	50
226-47-01	Silica Gel	6 x 70	2	100/50	GS	W W W	A	50
226-48	Silica Gel	7 x 110	2	150/150	GS	W W W	B	50
226-49-102	Chromosorb 102	6 x 70	2	66/33	GS	W W W	A	50
226-49-106	Chromosorb 106	6 x 70	2	75/37	GS	W W W	A	50
226-49-108	Anasorb 708	6 x 70	2	75/37	GS	W W W	A	50
226-51	Silica Gel	6 x 70	2	100/50	GS	F W W	A	50
226-53	Silica Gel *(sulfuric acid)*	6 x 70	2	150/75	GS	W W W	A	50
226-54	XAD-2 *(2-hydroxymethyl piperidine)*	6 x 70	2	45/23	GS	W W W	A	20
226-55	Silica Gel *(sodium hydroxide)*	7 x 70	2	150/75	GS	W W W	B	20
226-56 (OVS)	Tenax TA/Glass Fiber filter	13→8 x 75	2	140/70	GO	F F G T	V	10
226-57 (OVS)	XAD-7/Glass Fiber filter	13→8 x 75	2	200/100	GO	F F G T	V	10
226-57A (OVS)	XAD-7/Glass Fiber filter	13→8 x 75	2	200/100	GO	F F G T	V	50
226-58 (OVS)	XAD-2/Quartz filter	13→8 x 75	2	270/140	GO	F F Q T	V	10
226-58A (OVS)	XAD-2/Quartz filter	13→8 x 75	2	270/140	GO	F F Q T	V	50
226-59-03	Porapak-Q	6 x 70	2	78/39	GS	W W W	A	50
226-67	Anasorb CSC, Coconut Charcoal *(potassium hydroxide)*	6 x 70	2	100/50	GS	W R W W	A	50
226-70A	Silica Gel *(p-methoxyphenol)*	8 x 150	2	1200/600	GS	W W W	C	10
226-73	Anasorb CSC, Coconut Charcoal *(t-butylcatechol)*	6 x 70	2	100/50	GS	W W W	A	50
226-75	Anasorb 727¥	8 x 110	2	300/150	GS	W W W	B	20
226-80	Anasorb 747 *(potassium hydroxide)*	6 x 70	2	100/50	GS	F W W	A	50
226-81A	Anasorb 747	6 x 70	2	140/70	GS	F W W	A	20

* *Some sorbent tubes have a limited shelf-life; contact SKC for details*

¥ *Anasorb 727 is equivalent to Chromosorb 106.*

TUBE ENDS: GS: *Glass Sealed* ***GO:*** *Glass Open*
SEPARATORS: W: *Glass Wool* ***G:*** *Glass Fiber Filter* ***F:*** *Foam* ***T:*** *PTFE Ring* ***Q:*** *Quartz Filter* ***R:*** *Glass Spacer*

Best Practice

- Maintain the sorbent tube in a vertical position when sampling. This position will prevent sorbent from falling away from the tube wall and creating a small channel through which air would pass without contaminants adsorbing onto the sorbent.
- Store and prepare sampling media in solvent-free environments.

For tube holders and accessories
see pages 36-37

For Sample Pumps
see pages 7-23

For compliance sampling, use tubes as specified in a validated sampling method. It is the user's responsibility, employing a suitable method, to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before use. The user should adjust the sampling parameters for specific conditions and evaluate tubes under conditions of use to ensure that the desired results will be obtained.

Sorbent Tube Selection Guide

• TECH TIPS •

▶ Breakthrough is indicated when there is ≥ 25% contamination in the backup layer of sorbent. It can also mean the sorbent tube was inserted into the tube holder in the wrong direction. Always insert the tube into the holder with the arrow on the tube pointing toward the holder. If no arrow is printed on the tube, insert the end of the tube with the smallest sorbent section (backup section) into the holder.

▶ **Q: Is it possible to increase the flow rate of a method to lower the detection limit?**
A: NIOSH recommends not exceeding the method-stated maximum flow rate. Instead, sample for a longer period and monitor closely for breakthrough.

To select a tube for a specific compound, refer to the SKC Sampling Guide on catalog pages 172-247 or search the online Sampling Guides at skcinc.com for methods and required sorbent tubes.

Cat. No.*	Sorbent *(treatment)*	Size (mm) OD x L	Sections	Sorbent (mg)	Ends	Separators	Tube Cover	Qty.
226-82	Anasorb 747 Anasorb 747	8 x 110 8 x 110	1 1	400 200	GS	F W F W	D	20 sets
226-83	Anasorb 747	8 x 110	2	400/200	GS	F W W	B	50
226-84	Anasorb 747	10 x 110	2	800/200	GS	F W W	C	20
226-92	Polyurethane Foam (PUF)	22 x 100	1	76 mm	GO	—	P	ea
226-93	XAD-4	7 x 70	2	80/40	GS	W W W	B	50
226-94	XAD-7	6 x 70	2	60/30	GS	W W W	A	50
226-95	XAD-7	6 x 110	2	100/50	GS	W W W	B	50
226-96	XAD-7 *([NBD] chloride)*	8 x 110	2	100/50	GS	W W W	B	50
226-97	XAD-7 *(specially cleaned)* XAD-7 (2 tubes)	8 x 110 8 x 110 (2)	1 1	175 175 (2)	GS	W G W W W	—	20 sets
226-98	XAD-7 *(phosphoric acid)*	6 x 70	2	80/40	GS	W W W	A	50
226-99 (OVS)	Silica Gel/Glass Fiber filter	13→8 x 75	2	520/260	GO	F F G T	V	10
226-106A	Chromosorb 102	8 x 110	2	200/100	GS	W W W	B	20
226-107	Chromosorb 102	8 x 110	2	100/50	GS	W W W	B	50
226-110	Chromosorb 106	7 x 70	2	100/50	GS	W W W	B	50
226-111A	Chromosorb 106	10 x 150	2	600/300	GS	W W W	C	10
226-114	Porapak-P	6 x 110	2	100/50	GS	F W W	B	50
226-115	Porapak-Q	6 x 110	2	150/75	GS	W W W	B	50
226-116A	Porapak-T Porapak-T	6 x 40 6 x 40	1 1	75 25	GO	W W W W	B	10 sets
226-117	XAD-2 *(2-hydroxymethyl piperidine)*	6 x 110	2	150/75	GS	W W W	B	20
226-118	XAD-2 *(2-hydroxymethyl piperidine)*	6 x 110	2	120/60	GS	W W W	B	20
226-119 226-119A 226-119-7	High-purity Silica Gel with low background *(2,4-dinitrophenylhydrazine)*	6 x 110 6 x 110 7 x 110	2 2 2	300/150 300/150 300/150	GS GS GS	W W W W W W W W W	B B B	20 100 20
226-120	High-purity Silica Gel with low background *(2,4-dinitrophenylhydrazine)* with built-in ozone scrubber	8 x 115	3	1500/300/150	GS	W W W W	D	20

Save

* *Some sorbent tubes have a limited shelf-life; contact SKC for details*

TUBE ENDS: GS: *Glass Sealed* ***GO:*** *Glass Open*
SEPARATORS: W: *Glass Wool* ***G:*** *Glass Fiber Filter* ***F:*** *Foam* ***T:*** *PTFE Ring*

For compliance sampling, use tubes as specified in a validated sampling method. It is the user's responsibility, employing a suitable method, to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before use. The user should adjust the sampling parameters for specific conditions and evaluate tubes under conditions of use to ensure that the desired results will be obtained.

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Sorbent Tube Selection Guide

To select a tube for a specific compound, refer to the SKC Sampling Guide on catalog pages 172-247 or search the online Sampling Guides at skcinc.com for methods and required sorbent tubes.

Cat. No.*	Sorbent *(treatment)*	Size (mm) OD x L	Sections	Sorbent (mg)	Ends	Separators	Tube Cover	Qty.
226-124	PUF/Tenax TA/PUF	22 x 100	3	3 cm/750 mg/ 3 cm	GO	—	P	**ea**
226-126	PUF/Glass Fiber filter	22 x 100	1	76 mm	GO	S N	P	**ea**
226-129	PUF/XAD-2/PUF	65 x 125	3	50 mm/10 gm/ 25 mm	GO	—	—	**ea**
226-131	PUF	65 x 125	1	75 mm	GO	—	—	**ea**
226-134	Tenax TA	16 x 125	1	1.6 gm	GO	W W	—	**ea**
226-142	Carbon Beads/PTFE filter *(carbon beads treated with potassium hydroxide)*	16→8 x 85	2	100/50	GO	W W W T T	H	**5**
226-143	PUF/XAD-2/PUF	22 x 100	3	3 cm/1500 mg/ 3 cm	GO	—	P	**ea**
226-153	XAD-2 *(di-n-butylamine)*	8 x 110	2	400/200	GS	W W W	B	**20**
226-165A	Silica Gel *(mercuric cyanide)*	6 x 110	2	300/150	GS	W W W	B	**20**
226-170	XAD-4	6 x 70	1	120	GS	W W	A	**20**
226-175	XAD-4	8 x 150	2	400/200	GS	W W W	C	**20**
226-176	Silica Gel *(hydrochloric acid)*	10 x 150	3	700/150/150	GS	W W W W	C	**20**
226-177	Silica Gel *(silver nitrate)*/Glass Fiber filter *(sodium carbonate/glycerol)*	16→8 x 85	2	200/200	GO	T T T W W	H	**5**
226-178	Anasorb 747 *(hydrobromic acid)*	6 x 70	2	100/50	GS	W W W	A	**20**
226-182 **226-182A**	Molecular Sieve *(triethanolamine)* /Oxidizer/Molecular Sieve *(triethanolamine)*	10 x 110	3	400/400/600	GS	W W W W	C	**50** **10**
226-183	Silica Gel *(specially washed and baked)*/Glass Fiber filter	[7 x 110 7 x 110	[1 1	[600 600	GS	[W G W W G W	D	**20 sets**
226-184	Chromosorb 106/ Chromosorb 106/ Sodium Sulfate	8 x 150	3	150/300/1000	GS	W W W W	D	**50**

* *Some sorbent tubes have a limited shelf-life; contact SKC for details*

TUBE ENDS: GS: *Glass Sealed* ***GO:*** *Glass Open*
SEPARATORS: W: *Glass Wool* ***G:*** *Glass Fiber Filter* ***F:*** *Foam* ***T:*** *PTFE Ring* ***S:*** *Screen* ***N:*** *Nylon Ring*

For compliance sampling, use tubes as specified in a validated sampling method. It is the user's responsibility, employing a suitable method, to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before use. The user should adjust the sampling parameters for specific conditions and evaluate tubes under conditions of use to ensure that the desired results will be obtained.

ABOUT

SKC Single-tube Solution for NO/NO_2 Sampling

SKC's single sorbent tube for NO/NO_2 houses three sections of sorbent (oxidizer sandwiched between triethanolamine-treated molecular sieve) that existed previously as a sampling train of three separate tubes (Cat. No. 226-40A). The single 10 x 110-mm glass sorbent tube is available as Cat. No. 226-182 (Qty/50) and 226-182A (Qty/10).

Need tube holders and covers?
See pages 36-37 or visit skcinc.com.

SKC Bulk Sorbents for Laboratory QA/QC Requirements

- Undergo extensive cleaning procedures to ensure low backgrounds
- Meet stringent specifications for environmental applications

HIGH QUALITY GUARANTEED

Sorbent	Mesh Size	Amount (grams)	Cat. No.	Qty.
Anasorb 747	20/40	100	**P226200**	**ea**
Anasorb C300	20/40	100	**P226171**	**ea**
Anasorb CSC	20/40	100	**P2260101**	**ea**
Anasorb GCB1	20/40 60/80	10 10	**P226128** **P226132**	**ea** **ea**
Anasorb GCB2	20/40	10	**P226127**	**ea**
Silica Gel	20/40	100	**P22610**	**ea**
Tenax GR	20/35	10	**P226124**	**ea**
Tenax TA	35/60 20/35	10 10	**P226125** **P226126**	**ea** **ea**
XAD-2	20/60	100	**P226201**	**ea**

For Sample Pumps see pages 7-23

Sorbent Tube Selection Guide

To select a tube for a specific compound, refer to the SKC Sampling Guide on catalog pages 172-247 or search the online Sampling Guides at skcinc.com for methods and required sorbent tubes.

Cat. No.*	Sorbent *(treatment)*	Size (mm) OD x L	Sections	Sorbent (mg)	Ends	Separators	Tube Cover	Qty.
226-188	High-purity Silica Gel *(2,4-dinitrophenylhydrazine)*	10 x 110	2	800/200	GS	W W W	C	**20**
226-191	Silica Gel *(o-phenylenediamine)*	8 x 110	2	520/260	GS	W W W	B	**50**
226-192	XAD-2/XAD-2/Anasorb CSC	8 x 110	3	50/100/150	GS	W W W W	B	**50**
226-193-UC	Silica Gel *(methyl p-tolyl sulfoxide [MTSO])*	7 x 110	1	800	GS	W W	B	**20**
226-196	Anasorb CSC, Coconut Charcoal *(t-butylcatechol)*	8 x 110	2	400/200	GS	W W W	B	**20**
226-199-UC	Silica Gel *(methyl p-tolyl sulfoxide [MTSO])*	8 x 110	2	800/200	GS	W G W	B	**20**
226-210	Soda Lime	7 x 110	2	600/200	GS	W W W	B	**50**
226-211	XAD-7	8 x 110	2	175/175	GS	W W W	B	**20**
226-213	XAD-2 *(p-anisidine)*	8 x 110	2	200/100	GS	W W W	B	**20**
226-214	XAD-2 *(naphthylisocyanate)*	8 x 110	2	200/100	GS	W W W	B	**20**
226-330‡∞	Anasorb GCB2/GCB1/Carbosieve S-III	6 x 115	3	250/150/100	GO	W W W W	B	**ea**
226-339‡§∞	Tenax TA	1/4 x 3-1/2 in	1	100	GO	W W	B	**ea**
226-340‡§∞	Tenax TA	1/4 x 3-1/2 in	1	100	SS	S W W S	B	**ea**
226-341‡§∞	Carbosieve S-III	1/4 x 3-1/2 in	1	100	SS	S W W S	B	**ea**
226-345‡§∞	Tenax GR/Anasorb GCB2	1/4 x 3-1/2 in	2	125/120	GO	W W W	B	**ea**
226-346‡§∞	Anasorb GCB2/Carbosieve S-III	1/4 x 3-1/2 in	2	175/80	GO	W W W	B	**ea**
226-347‡§∞	Anasorb GCB2/GCB1/Carbosieve S-III	1/4 x 3-1/2 in	3	120/125/105	GO	W W W W	B	**ea**
226-348‡§∞	Tenax GR/Anasorb GCB1	1/4 x 3-1/2 in	2	175/150	SS	O S W S O	B	**ea**
226-349‡§∞	Anasorb GCB1/Carbosieve S-III	1/4 x 3-1/2 in	2	280/165	SS	S W S	B	**ea**
226-350‡§∞	Anasorb GCB2/GCB1/Carbosieve S-III	1/4 x 3-1/2 in	3	210/140/165	SS	S W W W S	B	**ea**
226-356‡§∞	Anasorb GCB1	1/4 x 3-1/2 in	1	400	SS	S W W S	B	**ea**
226-357‡§∞	Tenax TA	1/4 x 3-1/2 in	1	250	SS	S W W S	B	**ea**
226-358‡§∞	Chromosorb 106	1/4 x 3-1/2 in	1	350	SS	S W W S	B	**ea**
226-360‡§∞	Tenax TA	1/4 x 3-1/2 in	1	250	GO	W W	B	**ea**
226-363‡§∞	Carbopack X	1/4 x 3-1/2 in	1	400	SS	S W W S	B	**ea**

‡ Tubes are chemically conditioned before shipping; use within 6 months or recondition, restocking fee applies. ∞ Available unconditioned, see page 56
*§ Each tube has a flow direction arrow and unique number. * Some sorbent tubes have a limited shelf-life; contact SKC for details*

***TUBE ENDS: GS:** Glass Sealed **GO:** Glass Open **SS:** Stainless Steel Open*
***SEPARATORS: W:** Glass Wool **G:** Glass Fiber Filter **S:** Screen **O:** Other*

For compliance sampling, use tubes as specified in a validated sampling method. It is the user's responsibility, employing a suitable method, to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before use. The user should adjust the sampling parameters for specific conditions and evaluate tubes under conditions of use to ensure that the desired results will be obtained.

• TECH TIPS •

▶ Studies show that when sampling hydrogen cyanide gas, particulate hydrogen cyanide can vaporize and bias vapor results. To reduce the amount of particulate cyanide vapor generated when using NIOSH Method 6017, the sampling train has been modified. In place of Sorbent Tube Cat. No. 226-28 (soda lime [600/200 mg] with built-in 5-mm glass fiber filter), the train now contains **Sorbent Tube Cat. No. 226-210** (soda lime [600/200 mg]) at right and **25-mm A/E Glass Fiber Filter in two-piece cassette Cat. No. 225-710** *(see page 108).*

Tube Breakers

Description	Cat. No.
Tube Breaker, stainless steel, for 6, 7, 8, and 10-mm OD tubes	 226-03-055
Tube Tip Breaker/ Holder, doubles as a tube tip breaker and storage receptacle for up to 260 broken tips	 810-722

For Thermal Desorption Tubes conditioned by SKC or your lab
see page 56

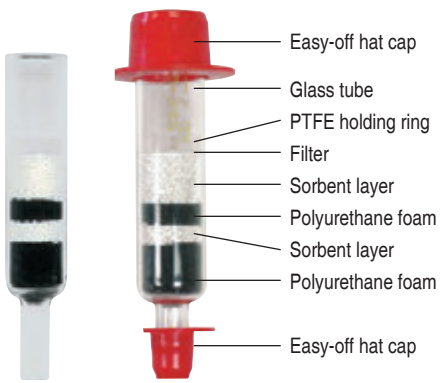
SKC IFV Pro Sampler for Mixed-phase Contaminants

ACGIH has assigned a TLV with the Inhalable Fraction and Vapor (IFV) designation to over 50 compounds that exert sufficient vapor pressure such that the compound may be present in both particulate and vapor phases with each contributing to the overall concentration. The SKC IFV Pro Sampler features an IOM-style inlet for collection of the inhalable fraction onto 25-mm filters and uses sorbent tubes for collection of the vapor phase at a flow rate of 1 L/min. *See page 123 or visit skcinc.com for more information.*

OSHA Versatile Samplers

For Sampling Pesticides, Explosives, and Glycols

- Sorbent and filter combined in one tube to meet NIOSH and OSHA method specifications
- Collect aerosols and vapors simultaneously
- Low backgrounds ensure sample reliability
- Available with a variety of sorbents
- Easy-off hat caps



OSHA designed OSHA Versatile Sampler (OVS) Tubes to overcome the inconveniences of earlier methods. OVS Tubes contain a filter to trap aerosols and a two-section sorbent bed to adsorb vapors in one specially constructed glass tube. Only cleaned and verified materials are used in OVS Tubes to ensure low background interference. A flow rate of 1 L/min provided by a personal sample pump is typically used to obtain volumes ranging from 60 to 480 liters. Samples are solvent extracted and analyzed using GC or HPLC methods.

Application — Method	Sorbent (mg)	Filter	Cat. No.*	Qty.
Pesticides — OSHA 62, 63, 67, 70, 74 **Organotin Compounds****	XAD-2 (270/140)	Glass Fiber	**226-30-16** **226-30-16A**	**10** **50**
Pesticides, organophosphorus — NIOSH 5600, 5601, 5602	XAD-2 (270/140)	Quartz Fiber	**226-58** **226-58A**	**10** **50**
Explosives (trinitrotoluene [TNT] and dinitrotoluene [DNT]) — OSHA 44 **Phthalate Esters —** OSHA 104 **Acrylates and Benzophenone —** Non-agency method†	Tenax TA (140/70)	Glass Fiber	**226-56**	**10**
Caprolactam Vapor — PV2012 **Glycols —** NIOSH 5523 **Polynuclear Aromatic Hydrocarbons (PAH) —** NIOSH 5528	XAD-7 (200/100)	Glass Fiber	**226-57** **226-57A**	**10** **50**
Kathon® 886 Biocide — Non-agency method‡	Silica Gel (520/260)	Glass Fiber	**226-99**	**10**
Accessories				
OVS Tube Holder includes 3 feet (0.9 meter) of tubing and collar clip, *see photo above right and details on p. 37*			**224-29V**	
OVS Calibration Adapter Kit includes tubing and calibration adapter			**224-31**	

* *Some sorbent tubes have a limited shelf-life; contact SKC for details* ** *Butyltin trichloride* † *See Ref. 39 on p. 245.* ‡ *See Ref. 55 on p. 245.*

IFV Pro Sampler

Simultaneous Inhalable and Vapor Sampling

Sample challenging mixed-phase contaminants such as pesticides, polyaromatic hydrocarbons, inorganic acids, and explosives. ***See page 123 for details.***

OVS Tube Holder

see ordering below left

For Sample Pumps

see pages 12-23

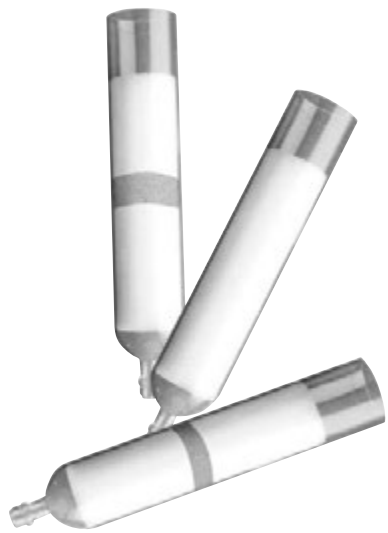
Low-volume PUF Tubes

For Sampling Semi-volatiles from 1 to 5 L/min

Replacement Parts

Replacement PUFs for Cat. No. 226-92 Uncleaned, 76-mm length **Cat. No. P22692**..... **Qty/20** Cleaned, 76-mm length **Cat. No. P22692C**..... **Qty/10**
Replacement Glass Precleaned and ready to use **Cat. No. P22692G**

- **Meet specifications of EPA Method TO-10A, EPA IP-8, and ASTM D4861**
- **For sampling up to 24 hours**
- **Custom PUF/sorbent combinations available**
- **Precleaned and ready to use**



Sample Time:	*4 to 24 hours*
Sample Rate:	*1 to 5 L/min*
Sample Pump:	*Universal Series, AirChek Series, or Leland Legacy*

24-hour Sampling?

Use Low-volume PUF Tubes with the Leland Legacy Sample Pump at 5 L/min,
see pages 24-25

SKC Low-volume PUF Tubes contain polyurethane foam (PUF) or PUF/sorbent combinations that meet the specifications of EPA and ASTM indoor and ambient air sampling methods for designated contaminants found in homes, public buildings, and offices. The methods specify the use of a sample pump, operating at a flow rate of 1 to 5 L/min, to draw air through the PUF tube to sample concentrations as low as 0.001 mg/m^3. Collection times vary from 4 to 24 hours. *See pages 14-23 and 24-25 for sample pump information.*

Low-volume PUF Tubes

Methods	Compounds	Sorbent (Amount)	Cat. No.	Qty.
EPA TO-10A, IP-8	Organochlorine and organophosphorus pesticides, carbamate, pyrethrin, triazine, and urea pesticides	PUF (76 mm)		
ASTM D4861	Organochlorine and organophosphorus pesticides and PCBs		**226-92**	**ea**
ASTM D4861	Organochlorine and organophosphorus pesticides and PCBs	PUF/Tenax/PUF (30 mm/750 mg/30 mm)		
EPA TO-10A	Organochlorine and organophosphorus pesticides, carbamate, pyrethrin, triazine, and urea pesticides		**226-124**	**ea**
Custom	Pesticides, PCBs, and PAHs	PUF/XAD-2/PUF (30 mm/1500 mg/30 mm)	**226-143**	**ea**
Custom	Pesticides, PCBs, and PAHs	PUF/Glass Fiber filter (76 mm)	**226-126**	**ea**
Accessories				
Tube Holder for Low-volume PUF Tubes, *see photo at left and details on p. 37*			**224-29P**	**ea**
Multi-purpose Calibration Jar, *see p. 116 for details*			**225-111**	**ea**

Note: *PUF tubes used in the Statements of Work for Superfund sites must be used and analyzed within 14 days of being cleaned.*

Low-volume PUF Tube Holder
see ordering at right

V Video P PowerPoint W Webinar S Sampling Solution
Visit skcinc.com

High-volume PUF Tubes

For Sampling Semi-volatiles from 220 to 280 L/min

SKC High-volume PUF and PUF/sorbent combination tubes are designed for use with high-volume samplers to meet EPA and ASTM method specifications for ambient air sampling. Applications include sampling organochlorine pesticides, polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs).

Combination PUF/XAD-2 sorbent tube

- Meets EPA Method 600/8-80-038 specifications
- Contains cleaned XAD-2 sorbent between two PUFs
- XAD-2 sorbent improves volatile component extraction during analysis

PUF-only sorbent tube

- Meets ASTM D6209-21, EPA IP-7, TO-4A, and TO-13A
- Packed with precleaned PUF for low background

SKC High-volume PUF Tubes are cleaned and ready to use.

Custom PUF Tubes

You provide the specifications, SKC will provide the tubes. Custom PUF, PUF/sorbent combination, and PUF/filter combination tubes are available.

Contact SKC with your specifications — skcinc.com/custom.

High-volume PUF Tubes

Methods	Compounds	Sorbent (Amount)	Cat. No.	Qty.
EPA 600/8-80-038	Organochlorine pesticides, PCBs	PUF/XAD-2/PUF (50 mm/10 gm/25 mm)		
Non-agency‡	Nonpolar organic compounds		**226-129**	**ea**
EPA IP-7, TO-4A, TO-13A	Organochlorine pesticides, furans, PCBs, PAHs	PUF (75 mm)		
ASTM D6209-21	Polycyclic aromatic hydrocarbons		**226-131**	**ea**

Note: *PUF tubes used in the Statements of Work for Superfund sites must be used and analyzed within 14 days of being cleaned.*
‡ *See Non-agency Method 38 on page 245.*

Replacement Parts

Description		Cat. No.	Qty.
Replacement PUF for Cat. No. 226-129, uncleaned	25-mm length	**P226129A**	**10**
	50-mm length	**P226129B**	**10**
Replacement PUF for Cat. No. 226-131, 75-mm length	Uncleaned	**P226131**	**10**
	Cleaned	**P226131C**	**10**
Glass Cartridge with support screens for Cat. No. 226-129 or 226-131		**P226129C**	**ea**

Quartz Filters for High-volume PUF Sampling

Description	Cat. No.	Qty.
QM-A, high-purity microfibers, 450-µm thickness, 102-mm diameter	**225-1808**	**100**

Deployable System for sampling PAHs, PCBs, pesticides, and associated particulate at 10 L/min,
see pages 26-27

V Video P PowerPoint W Webinar S Sampling Solution
Visit skcinc.com

Thermal Desorption Tubes

For Active Sampling of ppb-level VOCs in Ambient or Indoor Air

Traps for Volatile Organic Sampling Trains (VOSTs)

VOSTs are specified by U.S. EPA 0031 in SW-846 for sampling VOCs in gaseous effluent from stationary emission sources such as hazardous waste incinerators. SKC VOST traps meet method specifications, are tested for background and pressure drop, and feature Swagelok fittings and PTFE ferrules. Traps are **not** supplied thermally conditioned. *See note below.*

VOST Traps for EPA Method 0031, Tenax TA, 35/60 mesh (1.6 gm), glass open, 16-mm OD x 125-mm L
Cat. No. 226-134†

† *Limited shelf-life*

Note: *VOST traps must be conditioned prior to use. Use and analyze within 14 days of conditioning.*

Get Thermal Desorption Tubes online!
visit www.skcinc.com

For Sample Pumps,
see pages 7-23

SKC offers single and multiple-bed thermal desorption tubes that meet EPA Method TO-17 requirements. All SKC thermal desorption tubes are sealed with PTFE end caps and marked with a permanent serial number. SKC offers both **thermally conditioned** tubes for immediate use or **unconditioned (UP)** tubes for thermal conditioning by your laboratory as needed. It is best practice to condition thermal desorption tubes before each use to ensure background levels are suitable for ppb-level measurements.

Perkin Elmer or Markes International Thermal Desorber Tubes

*Available in **glass or stainless steel,** these tubes measure ¼-inch OD x 3 ½-inch length (6.35-mm OD x 88.9-mm length). Supplied as a single tube.*

Method	Sorbent	SS Conditioned Cat. No.	SS Unconditioned Cat. No.	Glass Conditioned Cat. No.	Glass Unconditioned Cat. No.
ASTM D6196 -15e1	Anasorb GCB1*	**226-356**	**226-356-UP**	—	—
ASTM D6196 -15e1; MDHS 104†	Tenax TA	**226-357**	**226-357-UP**	**226-360**	**226-360-UP**
ASTM D6196 -15e1; MDHS 104†	Chromosorb 106	**226-358**	**226-358-UP**	—	—
EPA TO-1, IP-1B	Tenax TA	**226-340**	**226-340-UP**	**226-339**	**226-339-UP**
EPA TO-2	Carbosieve S-111	**226-341**	**226-341-UP**	—	—
EPA TO-17	Anasorb GCB1*/Carbosieve S-111	**226-349**	**226-349-UP**	—	—
EPA TO-17, NIOSH 2549	Anasorb GCB2*/Anasorb GCB1*/ Carbosieve S-111	**226-350**	**226-350-UP**	**226-347**	**226-347-UP**
EPA TO-17	Tenax GR/Anasorb GCB1*	**226-348**	**226-348-UP**	—	—
EPA TO-17	Anasorb GCB2*/Carbosieve S-111	—	—	**226-346**	**226-346-UP**
EPA TO-17	Tenax GR/Anasorb GCB2*	—	—	**226-345**	**226-345-UP**

† *Stainless steel tubes only*

Perkin Elmer or Markes International Thermal Desorber Tubes with Carbopack X

*Select tubes with Carbopack X sorbent for superior recovery of very volatile compounds. Available in **stainless steel,** these tubes measure ¼-inch OD x 3 ½-inch length (6.35-mm OD x 88.9-mm length).*

Method	Sorbent		Cat. No.	Qty.
MDHS 104†	Carbopack X	Conditioned	**226-363**	**ea**
		Unconditioned	**226-363-UP**	**ea**

† *Stainless steel tubes only*

Screening Tubes (Dynatherm Thermal Desorber)

*Available in **glass,** these tubes measure 0.24-inch OD x 4.5-inch length (6-mm OD x 115-mm length).*

Method	Sorbent		Cat. No.	Qty.
EPA IP 1B, NIOSH 2549	GCB2*/GCB1*/Carbosieve S-111	Conditioned	**226-330**	**ea**
		Unconditioned	**226-330-UP**	**ea**

* *Anasorb GCB1 is equivalent to Carbopack B; Anasorb GCB2 is equivalent to Carbopack C.*

Accessories

Description	Cat. No.	Qty.
Glass Transport Tubes, for 3 1/2-inch (88.9-mm) length tubes	**226-300**	**5**
PTFE Ferrules, set of 2	**P30121**	**ea**
Swagelok Fittings, for 1/4-inch (6.35-mm) OD tubes, set of 2	**P50291**	**ea**

Custom
SORBENT TUBES

Trust SKC's 50+ Years in Sorbent Media

Our chemists, product design specialists, technicians, and QA professionals are here to build the custom sorbent media you need for in-house methods and SOPs.

- Precision manufacturing
- Stringent quality control
- Technical support from our team of scientists
- Competitive prices

Visit skcinc.com/custom, or contact SKC for a quote.

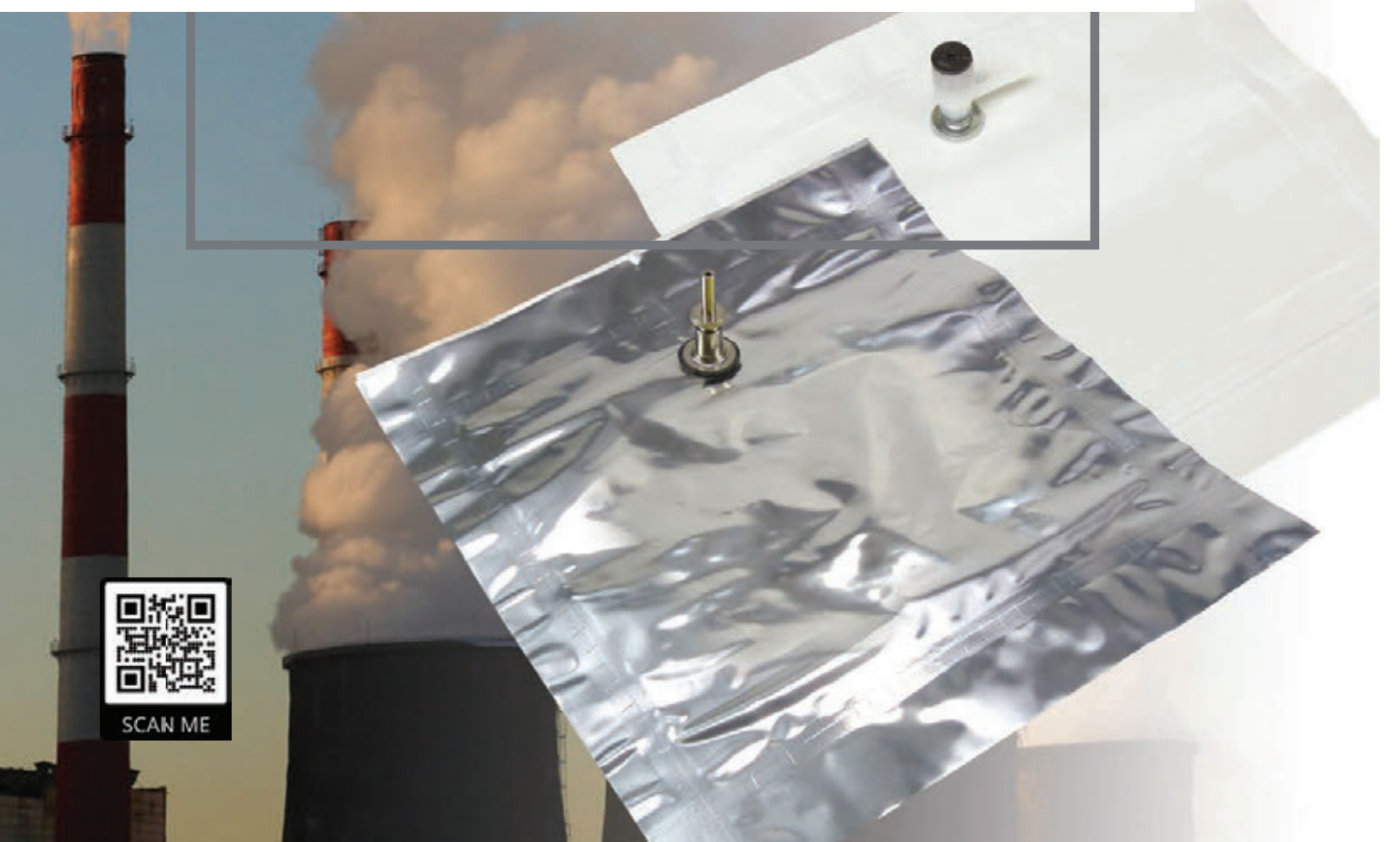
SCAN ME

SKC SAMPLE BAGS

SKC Sample Bags
SKC sample bags are constructed of high-quality films with evenly sealed, leak-free seams and high-quality bag fittings.

Make the Best Choice!
SKC publishes performance data on its bag films to equip you with the knowledge you need to make the best choice for your applications.

Custom Bags
Our team of experts will create the bags you need! Select the film, fitting, bag dimensions, and more!



SCAN ME

SKC — The Best Choice in Sample Bags

Choose from over 60 popular combinations!

High-quality bag films

- ❑ **Tedlar,** *see pages 60-61*
- ❑ **Standard FlexFoil,** *see page 62*
- ❑ **FlexFoil PLUS,** *see page 63*

Need help choosing the right bag material? Visit **skcinc.com.**

Bag fittings designed for your application

- ❑ **Single Polypropylene** combined hose/valve and septum
- ❑ **Single Stainless Steel** combined hose/valve and septum
- ❑ **Dual Stainless Steel** separate hose/valve and septum
- ❑ **Breath-gas Analysis,** in stainless steel or polypropylene with mouthpiece

Sample pumps optimized for bag sampling

- ❑ **Pocket Pump TOUCH —** programmable, touch screen, and intrinsically safe. *See page 10 or 65*
- ❑ **Grab Air —** economy with fixed 1 L/min flow rate (not CE/UKCA marked). *See page 64*

Need a **custom bag?**

Choose your film, fitting, size, and more for your application.
Submit your specifications for SKC Custom Bags at
skcinc.com/custom.

SCAN ME

Classic Tedlar Bags for VOCs
The Flexibility of Dual Stainless Steel Fittings

APPLICATIONS
Breath-gas Analysis Bags

Breath-gas Analysis Bags are designed for sanitary, effective capture of human exhaled air for several applications, including:

- **ACGIH Biological Exposure Indices (BEIs)** determined by end-exhaled air for carbon monoxide, methyl chloroform, tetrachloroethylene, and trichloroethylene
- **NIOSH Method 3704 for perchloroethylene** with collection of exhaled air into Tedlar bags for analysis by GC/PID
- **Collection of human breath to be analyzed for VOCs or volatile sulfur compounds (VSCs)**, possible biomarkers for some diseases

SKC Breath-gas Analysis Bags are offered in Tedlar and FlexFoil PLUS. ***See below right and pages 61 and 63.***

- **Industry standard Tedlar film offers good stability for VOCs and some sulfur compounds**
- **Dual stainless steel fittings provide complete sampling flexibility**
  - Bags are configured with one hose/valve fitting and one septum fitting
- **Reliable, inert stainless steel fitting construction prevents leakage**
- **Stocked in a variety of sizes; custom bags available**
- **Breath-gas analysis bags for BEIs based on end-exhaled air for medical applications** ***(see left)***
- **Routine QC of every batch for total hydrocarbons**

PERFORMANCE PROFILE

Background
Moderately low VOC

Stability
Good for VOCs, some sulfur compounds (including H_2S), CO, CO_2, methane, and SF_6

Thickness
2 mil

Sample Pump
Grab Air or Pocket Pump TOUCH, *see pp. 64-65*

Tedlar Bags with Dual Stainless Steel Fittings

Maximum Capacity (liter)	Cat. No.	Qty.	Fittings
1	231-01 231-01A	10 ea	
3	231-03	10	
5	231-05 231-05A	10 ea	
10	231-10	10	
25	231-25	5	
50	231-50	5	
75	231-75	5	
100	231-100	3	
Replacement Septa	231-9-04	10	

For PTFE Tubing
see page 64

Tedlar Bag with Stainless Steel Breath-gas Analysis Fitting

Description	Cat. No.	Qty.	Fitting
Tedlar Sample Bags, 1 liter, each with stainless steel fitting and individually packaged clean mouthpiece, *see above left*	249-01	5	

MORE INFORMATION
skcinc.com

Classic Tedlar Bags for VOCs
Convenient and Economical Single Polypropylene Fitting

- **Single polypropylene fitting**
  - Combines the septum and hose/valve into one fitting
- **An industry standard!**
- **Economical**
- **Single lightweight fitting provides easy bag handling**
- **Stocked in a variety of sizes; custom bags available**
- **Routine QC of every batch for total hydrocarbons**

PERFORMANCE PROFILE

Background
Moderately low VOC

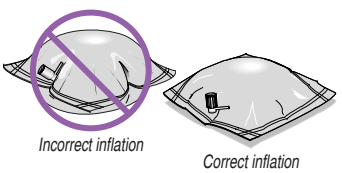
Stability
Good for VOCs, some sulfur compounds (including H_2S), CO, CO_2, methane, and SF_6

Thickness
2 mil

Sample Pump
Grab Air or Pocket Pump TOUCH, *see pp. 64-65*
Also see the Vac-U-Chamber on pp. 66-67.

• TECH TIPS •

▶Avoid filling a sample bag more than 80% of its maximum volume.



▶View this video for proper opening and closing of SKC Polypropylene Bag Fittings: *https://youtu.be/JTRTP-Vr7p8*

MOST POPULAR BAG

Tedlar Bags with Single Polypropylene Fitting

Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
0.5	232-02	10	
1 *(Fits small Vac-U-Chamber Cat. No. 231-940)*	232-01 232-01A	10 ea	
3	232-03 232-03A	10 ea	
5	232-05 232-05A	10 ea	
8 *(Fits large Vac-U-Chamber Cat. No. 231-939)*	232-939	10	
10 *(Fits extra-large Vac-U-Chamber Cat. No. 231-944)*	232-10 232-10A	10 ea	
25 *(Fits jumbo Vac-U-Chamber Cat. No. 231-946)*	232-25	5	
50	232-50	5	
75	232-75	5	
100	232-100	3	
Replacement Septa	232-01-RS	10	

Tedlar Bag with Polypropylene Breath-gas Analysis Fitting

Description	Cat. No.	Qty.	Fitting
Tedlar Sample Bags, 1 liter, each with polypropylene fitting, fitting adapter, and individually packaged clean mouthpiece, *see Applications on p. 60*	249-01-PP	5	

For Bag Sampling Pumps
see pages 64-65

For negative pressure sample collection
see pages 66-67

Standard FlexFoil Sample Bags

Superior Bag for Sulfur Compounds and Low Molecular Weight Gases

APPLICATIONS

Standard FlexFoil Bags

- *CO_2 — OSHA Method ID-172*
- *CO_2 — NIOSH 6603*
- *CO — OSHA ID-210‡*
- *Sulfur compounds*
- *Indoor air studies (CO, CO_2, SF_6)*

‡ OSHA ID-210 specifies 5-layer foil bags. SKC 4-ply FlexFoil bags hold 100 ppm CO for 5 days without loss. See skcinc.com for more information.

- **Effectively retain hydrogen sulfide for 48 hours!**
- **Strong, flexible, evenly sealed seams**
- **Lightproof and moistureproof**
  - Excellent for light-sensitive compounds
- **Choice of all-in-one polypropylene or stainless steel hose/valve and septum fittings**
- **Stocked in a variety of sizes**
- **Custom bags available**

PERFORMANCE PROFILE

Background
Moderate to high VOC and low sulfur

Stability
Good for CO, CO_2, methane, hydrogen, and SF_6
Good 48-hour stability for H_2S, hydrogen, carbonyl sulfide, and methyl and ethyl mercaptan

Thickness
4 ply (5 mil)

Sample Pump
Grab Air or Pocket Pump TOUCH, *see pp. 64-65*
Also see the Vac-U-Chamber on pp. 66-67.

Standard FlexFoil® Bags with Single Polypropylene Fitting

Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
1 *(Fits small Vac-U-Chamber Cat. No. 231-940)*	262-01 262-01A	10 ea	
3	262-03 262-03A	10 ea	
5	262-05	10	
8 *(Fits large Vac-U-Chamber Cat. No. 231-939)*	262-08	10	
10 *(Fits extra-large Vac-U-Chamber Cat. No. 231-944)*	262-10	10	
25 *(Fits jumbo Vac-U-Chamber Cat. No. 231-946)*	262-25	5	
50	262-50	5	
Replacement Septa	236-01-RS	10	

Standard FlexFoil Bags with Single Stainless Steel Fitting

Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
1	263-01 263-01A	10 ea	
3	263-03 263-03A	10 ea	
5	263-05	10	
10	263-10	10	
25	263-25	5	
50	263-50	5	
Replacement Septa	233-01-RS	10	

MORE INFORMATION
skcinc.com

FlexFoil PLUS Sample Bags
Specially Cleaned for Low ppm to High ppb-Level VOCs

- All the benefits of Standard FlexFoil — PLUS detection and good storage stability for low ppm to high ppb-level VOCs
- Strong, flexible, evenly sealed seams
- Lightproof and moistureproof
- Choice of all-in-one polypropylene or stainless steel hose/valve and septum fittings
- Stocked in many sizes; custom bags available
- Breath-gas analysis bags are available in FlexFoil PLUS
- Routine QC of every batch for total hydrocarbons

PERFORMANCE PROFILE

Background
Low VOC and sulfur *(specially cleaned)*

Stability
Good for low ppm to high ppb-level VOCs
Good for CO, CO_2, methane, hydrogen, and SF_6
Good 48-hour stability for H_2S, hydrogen, carbonyl sulfide, and methyl and ethyl mercaptan

Thickness
4 ply (5 mil)

Sample Pump
Grab Air or Pocket Pump TOUCH, *see pp. 64-65*
Also see the Vac-U-Chamber on pp. 66-67.

APPLICATIONS
FlexFoil PLUS Bags

- *Biogas and landfill gas (LFG) sampling*
- *Sampling low-level VOCs*
- *Pollution level monitoring*
- *Site sampling/mobile surveys*
- *Breath analysis*
- *Calibration gas transfer*
- *Calibration mixtures*
- *Leak/spill exposure assessment*

MORE INFORMATION
skcinc.com

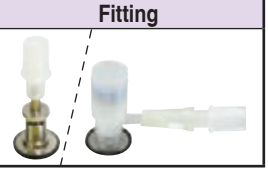
FlexFoil PLUS Bags with Single Polypropylene Fitting

Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
1 *(Fits small Vac-U-Chamber Cat. No. 231-940)*	**252-01** **252-01A**	**10** **ea**	
3	**252-03** **252-03A**	**10** **ea**	
5	**252-05**	**10**	
8 *(Fits large Vac-U-Chamber Cat. No. 231-939)*	**252-08**	**10**	
10 *(Fits extra-large Vac-U-Chamber Cat. No. 231-944)*	**252-10**	**10**	
25 *(Fits jumbo Vac-U-Chamber Cat. No. 231-946)*	**252-25**	**5**	
50	**252-50**	**5**	
Replacement Septa	**236-01-RS**	**10**	

FlexFoil PLUS Bags with Single Stainless Steel Fitting

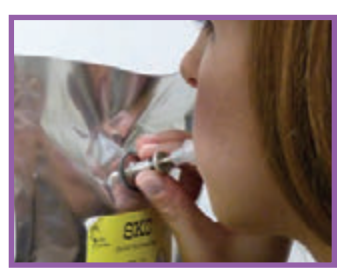
Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
1	**253-01** **253-01A**	**10** **ea**	
3	**253-03** **253-03A**	**10** **ea**	
5	**253-05**	**10**	
10	**253-10**	**10**	
25	**253-25**	**5**	
50	**253-50**	**5**	
Replacement Septa	**233-01-RS**	**10**	

FlexFoil PLUS Bags with Breath-gas Analysis Fitting

Description	Cat. No.	Qty.	Fitting
FlexFoil PLUS Sample Bags, 1 liter, each with individually packaged clean mouthpiece *See Applications on p. 60 and at right for details.*			
Stainless steel fitting	**269-01**	**5**	
Polypropylene fitting	**269-01-PP**	**5**	

APPLICATIONS
Breath-gas Analysis Bags

- *ACGIH BEIs for end-exhaled air*
- *Metabolic status determination*
- *Asthma detection by exhaled nitric oxide*
- *Lung cancer detection*
- *Diabetes detection*
- *Fructose malabsorption with hydrogen breath test*
- *Helicobacter pylori (H. pylori) with urea breath test*
- *Organ rejection detection*
- *Carbon monoxide poisoning detection*
- *Smoking cessation evaluation*
- *NIOSH Method 3704 for perchloroethylene in exhaled breath*


Easy sampling for breath-gas analysis

Grab Air Sample Pump — 1 L/min
Economy Pump for Filling Bags

- 9-volt alkaline battery for approximately 1000 liters of volume on one battery
- Low battery indicator
- Fixed 1 L/min flow rate

The SKC Grab Air Sample Pump is an economical choice for grab-and-go bag sampling when intrinsic safety is not required. Grab Air operates at a fixed flow rate of 1 L/min for up to 1000 liters of volume on one 9-volt battery. Simply attach a sample bag to the outlet port and turn on the pump. Simple, quick, economical — Grab Air.

For high-quality Tedlar and FlexFoil Sampling Bags
see pages 60-63

Description	Cat. No.	Qty.
Grab Air Pump* with 9-volt alkaline battery	222-2301	ea
Grab Air Hazmat Kit includes pump* as described above, 3 feet of 3/16-inch (4.76-mm) ID PTFE tubing, and ten 1-liter Tedlar bags with single polypropylene fitting Cat. No. 232-01	222-2111	ea

* *Not CE/UKCA marked*

PTFE Tubing
Inert Tubing for Bag Sampling

- Heat and corrosion resistant
- Chemically inert
- Strong

Chemically inert SKC PTFE tubing is ideal for bag sampling to prevent sample loss through adsorption to the tubing's inner surface. SKC offers PTFE tubing with different diameters to fit over or inside bag fittings.

• TECH TIPS •

- Use only PTFE tubing for bag sampling to prevent sample loss through adsorption to the tubing's inner surface.
- PTFE tubing can be used at temperatures up to 500 F (260 C).

PTFE Tubing	Cat. No.	Length	Qty.
Fits over all SKC bag fittings and Grab Air pump exhaust; fits into Pocket Pump TOUCH Quick-connect Adapter	231-927	3 ft	ea
3/16-inch (4.76-mm) ID, 1/4-inch (6.35-mm) OD	231-9-23	10 ft	ea
Fits inside bag fitting 1/16-inch (1.59-mm) ID, 1/8-inch (3.18-mm) OD	231-9-21	10 ft	ea
Fits Vac-U-Chamber sample inlet	231-937	10 ft	ea
1/4-inch (6.35-mm) ID, 5/16-inch (7.94-mm) OD	231-924	50 ft	ea

Pocket Pump TOUCH — 20 to 500 ml/min
Programmable Pump for Bag Sampling

- Quick-connect accessory on exhaust port provides easy and secure bag sampling
- Constant flows from 20 to 500 ml/min — also suitable for sorbent tube sampling and other low flow applications *(see pages 10-11)*
- Easy touch screen operation
- Intrinsically safe

Certifications

Intrinsic safety: UL913, CAN/CSA C22.2, ATEX, IECEx, UKEX

Other: CE, UKCA

Description	Cat. No.	Qty.
Pocket Pump TOUCH with Li-Ion battery pack, *requires Pocket Pump TOUCH charger* *See Quick-connect Adapter below for sampling with rigid PTFE 1/4-inch OD tubing*	**220-1000TC**	**ea**
Pocket Pump TOUCH Single Charger	**220-300**	**ea**

Need more information on bag sampling?

WWW.SKCINC.COM

SKCINC.COM

Quick-connect Accessory for Secure Bag Sampling

- Rugged metal
- Easy installation on pump exhaust
- Holds rigid PTFE 1/4-inch OD tubing securely
- Simply press to release tubing

Only for Pocket Pump TOUCH

The Quick-connect Adapter accessory makes bag sampling with Pocket Pump TOUCH fast, easy, and secure. The Quick-connect Adapter threads into the pump exhaust port and securely holds rigid PTFE 1/4-inch OD tubing during sampling. When sampling is complete, a quick press of the adapter flange releases the tubing.

Cat. No. 220-200

For negative pressure sample collection
see pages 66-67

Vac-U-Chamber
Eliminates Pump Contamination During Bag Sampling

- **Allows direct filling of air sample bags**
  - Uses negative pressure provided by most personal air sample pumps
  - Designed to contain SKC sample bags
- **Rugged and airtight construction**
  - Will not collapse under vacuum
- **Available in several sizes, including extra large for EPA Method 0040**
- **Sample line extends from contaminant source through case to bag**

The AirChek Essential+ Sample Pump is ideal for use with the Vac-U-Chamber.

For Convenient, Reliable Bag Sampling

The SKC Vac-U-Chamber is a rigid air sample box that allows sample bags to be filled directly by using negative pressure provided by most personal air sample pumps. Because the sample does not pass through the pump, both sample and pump contamination are eliminated. All surfaces in contact with the sample are constructed of inert materials. The Vac-U-Chamber's rigid walls will not collapse under vacuum conditions.

APPLICATIONS

Vac-U-Chamber

- *U.S. EPA Method 18 (VOCs — industrial sources)*
- *U.S. EPA 0040 (POHCs — stationary sources)*
  Soil gas/vapor intrusion sampling
  -U.S. EPA SOP 2042
- *Groundwater testing*
- *Stack sampling*
- *Ventilation studies*
- *Hazmat testing*

Vac-U-Chamber in use with the AirChek XR5000 Sample Pump

Vac-U-Chamber
Multiple Sizes Available for Your Applications

Small Vac-U-Chamber for 1-liter Bags

Description		Cat. No.	Qty.
Complete Vac-U-Chamber Kit includes sample pump as described below, single charger, small Vac-U-Chamber, and 10 Tedlar sample bags Cat. No. 232-01			
with Standard AirChek XR5000 Sample Pump	**100-240 V**	**210-4124**	**ea**
with Universal Pump (224-PCMTX8)	**100-240 V**	**224-4124MTX**	**ea**
Small Vac-U-Chamber only with polypropylene fittings (supplied without pump), suitable for use with SKC 1-liter sample bags below		**231-940**	**ea**
1-liter Sample Bags with single polypropylene fitting, for use with small Vac-U-Chamber Cat. No. 231-940	**Tedlar**	**232-01**	**10**
	FlexFoil PLUS	**252-01**	**10**
	Standard FlexFoil	**262-01**	**10**

Large Vac-U-Chamber for 8-liter Bags

Description		Cat. No.	Qty.
Complete Vac-U-Chamber Kit includes sample pump as described below, single charger, large Vac-U-Chamber, and 10 Tedlar sample bags Cat. No. 232-939			
with Standard AirChek XR5000 Sample Pump	**100-240 V**	**210-4115**	**ea**
with Universal Pump (224-PCMTX8)	**100-240 V**	**224-4115MTX**	**ea**
Large Vac-U-Chamber only with stainless steel fittings (supplied without pump), suitable for use with SKC 8-liter sample bags below		**231-939**	**ea**
8-liter Sample Bags with single polypropylene fitting, for use with large Vac-U-Chamber Cat. No. 231-939	**Tedlar**	**232-939**	**10**
	FlexFoil PLUS	**252-08**	**10**
	Standard FlexFoil	**262-08**	**10**

Extra-large Vac-U-Chamber for 10-liter Bags

Description		Cat. No.	Qty.
Extra-large Vac-U-Chamber only with stainless steel fittings (supplied without pump), suitable for use with SKC 10-liter sample bags below		**231-944**	**ea**
10-liter Sample Bags with single polypropylene fitting, for use with extra-large Vac-U-Chamber Cat. No. 231-944	**Tedlar**	**232-10**	**10**
	FlexFoil PLUS	**252-10**	**10**
	Standard FlexFoil	**262-10**	**10**

Jumbo Vac-U-Chamber for 25-liter Bags

Description		Cat. No.	Qty.
Jumbo Vac-U-Chamber only with stainless steel fittings (supplied without pump), suitable for use with SKC 25-liter sample bags below		**231-946**	**ea**
25-liter Sample Bags with single polypropylene fitting, for use with jumbo Vac-U-Chamber Cat. No. 231-946	**Tedlar**	**232-25**	**5**
	FlexFoil PLUS	**252-25**	**5**
	Standard FlexFoil	**262-25**	**5**

Kits available with AirChek XR5000 or Universal Sample Pump (at left). For additional pumps, *see pages 16-23 or visit skcinc.com*

MORE INFORMATION
skcinc.com

Best Practice

- **Using the negative pressure Vac-U-Chamber eliminates contamination and preserves sample integrity.**
- **To prevent the risk of carryover from a previous sample,* do not reuse sample bags.**

** Reference: McGarvey, L.J., Shorten, C.V., "The Effects of Adsorption on the Reusability of Tedlar Air Sample Bags," AIHA Journal, V. 61, May/June 2000, pp. 375-380, https://doi.org/bmwjxf*

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Visit skcinc.com

SKC Chemically Coated Filters
Meet Agency Method Specifications

- Ready to use
- Convenient personal sampling
- Small package sizes for short shelf-life products

SKC Coated Filters make sampling reactive compounds safe and simple by eliminating the inconveniences of wet chemistry sampling with impingers and producing a stable compound for storage and analysis. SKC Coated Filters are easy to use: insert the cassette into an SKC Filter Cassette Holder, clip to the worker's collar, and connect to a personal sample pump. Certificates of Compliance are available; *visit skcinc.com/certificates*.

See SKC Coated Filter ordering on page 69.

Custom Coated Filters

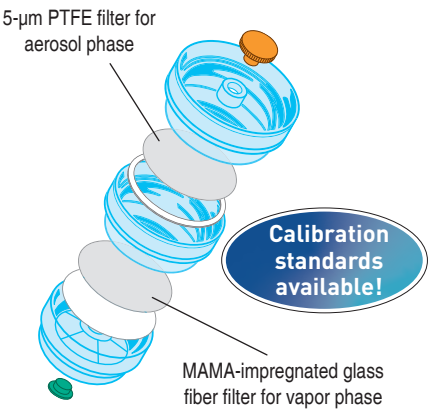
- Choose filter materials
- Specify filter pore size and diameter
- Choose support pad material
- Strict QC for consistent, accurate coating
- Available as filters only or preloaded in ready-to-use cassettes

CONTACT US

Visit **skcinc.com/custom** or contact SKC for a quote.

ISO-CHEK
Simultaneous and Separate Collection of Isocyanate Phases

- Accurately samples diisocyanates: HDI, MDI, IPDI, 2,4-TDI, and 2,6-TDI
- Meets ASTM D5932-20 (2,4 and 2,6-TDI), D6561 (HDI), and D6562 (HDI)
- Simultaneously traps and separates both monomers and oligomers at point of collection
- Decreases sample preparation and analysis time by 40%
- Highly stable — low-temperature storage/transport not required
- Detection limits below current regulated exposure levels
- Requires only a 15-minute sample time
- Round-robin proficiency testing for ISO-CHEK® labs — visit skcinc.com/lab



Exploded view of ISO-CHEK Filter Cassette (Cassette in image is tinted for clarification.)

Description	Cat. No.	Qty.
ISO-CHEK Sampling System with Derivatizing Reagent,*†‡ preloaded clear cassettes (not banded) and jars of Derivatizing Solution (MOPIP in toluene)	**225-9023** **225-9023A**	**4** **10**
ISO-CHEK Cassettes,*‡ preloaded clear cassettes (not banded) for isocyanates, *requires Derivatizing Solution; see below*	**225-9022** **225-9022A**	**12** **36**

Accessories	Cat. No.	Qty.
Derivatizing Solution,*†‡ 5 ml of MOPIP in toluene, in jars	**225-9050**	**12**
Jars, 37 mm with PTFE-lined cap	**225-8377**	**36**
Calibration Standard,‡ MAMA-HDI, 1 gram	**225-9053**	**ea**
Calibration Standard,‡ MAMA-IPDI, 1 gram	**225-9054**	**ea**
Calibration Standard,‡ MAMA-MDI, 1 gram	**225-9062**	**ea**
Calibration Standard,‡ MAMA-2,4-TDI and 2,6-TDI, 1 gram	**225-9052**	**ea**
Calibration Standard Set,‡ HDI, MDI, IPDI, 2,4-TDI, 2,6-TDI, 1 gram each	**225-9055**	**set**
Packaging Kit, materials for shipping 10 packages of 10 samplers and jars	**225-9059**	**ea**

* *Limited shelf-life* † *Hazmat shipping charges for air shipments only, ground shipments exempt*
‡ *Limited shelf-life, storage ≤ 39.2 F (4 C) required; refrigerated shipping not required*

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Visit skcinc.com

Coated Filter Selection Guide

Chemical	Method	Preloaded Filter; Coating (in 37-mm cassettes)	Cat. No.*	Qty.
Acetic anhydride	OSHA 102	2 Glass Fiber filters; veratrylamine and di-n-octyl phthalate	225-9010 §	10
4-Aminobiphenyl	OSHA 93	2 Glass Fiber filters; sulfuric acid	225-9004	10
Aniline	NIOSH 2017 ¥	2 Glass Fiber filters; sulfuric acid	225-9004 ¥	10
Arsenic, volatile compounds	OSHA ID-1006	1 MCE filter and plastic pad; untreated and 1 cellulose support pad; sodium carbonate	225-9001	10
Benzidine	OSHA 65	2 Glass Fiber filters; sulfuric acid	225-9004	10
Bromine, chlorine	NIOSH 6011	1 **25-mm** PTFE pre-filter and polypropylene support; 1 **25-mm** specially cleaned silver membrane and polypropylene support **(in 25-mm cassette)**	225-9006	5
Crotonaldehyde	OSHA 81	2 Glass Fiber filters; 2,4-dinitrophenylhydrazine and phosphoric acid	225-9019 §	10
o-Dianisidine	OSHA 71	2 Glass Fiber filters; sulfuric acid	225-9004	10
3,3'-Dichlorobenzidine	OSHA 65	2 Glass Fiber filters; sulfuric acid	225-9004	10
Diisocyanates (HDI; 2,6-TDI; 2,4-TDI)	ASTM D5836 Δ OSHA 42	1 Glass Fiber filter and cellulose support; 1-(2-pyridyl)piperazine	225-9013 †§ 225-9002 §	10 10
Diphenylamine	OSHA 78	2 Glass Fiber filters; sulfuric acid	225-9004	10
Fluorides	OSHA ID-110 NIOSH 7902 ASTM D4765	1 MCE filter and plastic pad; untreated and 1 cellulose support pad; sodium carbonate	225-9001 #	10
Fluorides, particulate	NIOSH 7906	2 Nitrocellulose filters; 1 coated with sodium carbonate, 1 uncoated	225-9031	10
Glutaraldehyde	OSHA 64	2 Glass Fiber filters; 2,4-dinitrophenylhydrazine and phosphoric acid	225-9003 §	10
Glyoxal	For IFV	2 **25-mm** Glass Fiber filters; 2,4-dinitrophenylhydrazine *(filters only, in jar)*	225-9036 §	10
Hydrazine	OSHA 108	2 Glass Fiber filters; sulfuric acid	225-9012	10
Hydrofluoric acid	NIOSH 7906	2 Nitrocellulose filters; 1 coated with sodium carbonate, 1 uncoated	225-9031	10
Hydrogen bromide	NIOSH 7907	2 Quartz filters (R-100); 1 coated with sodium carbonate, 1 uncoated	225-9032	10
Hydrogen chloride	NIOSH 7907	2 Quartz filters (R-100); 1 coated with sodium carbonate, 1 uncoated	225-9032	10
Hydrogen peroxide	OSHA 1019	2 **25-mm** Quartz filters (R-100); titanium oxysulfate hydrate **(in 25-mm cassette)**	225-9030 §	10
Isocyanates	ASTM Methods	1 PTFE filter; 1 Glass Fiber filter impregnated with MAMA (ISO-CHEK Sampling System, *see p. 68)*	225-9022 ‡ 225-9022A ‡	12 36
Isocyanates (HDI; 2,6-TDI; 2,4-TDI)	ASTM D5836 Δ OSHA 42	1 Glass Fiber filter and cellulose support; 1-(2-pyridyl)piperazine	225-9013 †§ 225-9002 §	10 10
Isocyanates, organic	MDHS 25/4 (UK)	1 **25-mm** A/E Glass Fiber filter; methoxyphenyl piperazine *(filters only, in jar)*	Special order §	ea
n-Isopropylaniline	OSHA 78	2 Glass Fiber filters; sulfuric acid	225-9004	10
Maleic anhydride	OSHA 86	2 Glass Fiber filters; veratrylamine	225-9021 †§	10
Maleic anhydride	For IFV	1 **25-mm** Glass Fiber filter; veratrylamine *(filters only, in jar)*	225-9028 §	10
Mercaptans (methyl-, ethyl-, n-butyl-, phenyl-)	NIOSH 2542 OSHA 26	1 Glass Fiber filter; mercuric acetate	225-9007 §	10
4,4'-Methylene bis (2-chloroaniline) (MOCA)	OSHA 71	2 Glass Fiber filters; sulfuric acid	225-9004	10
4,4'-Methylene bis (phenyl isocyanate) (MDI)	OSHA 47	1 Glass Fiber filter and cellulose support; 1-(2-pyridyl)piperazine	225-9013 †§ 225-9002 §	10 10
4,4'-Methylenedianiline	OSHA 57 NIOSH 5029	2 Glass Fiber filters; sulfuric acid	225-9004	10
1-Naphthylamine, 2-naphthylamine	OSHA 93	2 Glass Fiber filters; sulfuric acid	225-9004	10
Nitric acid	NIOSH 7907	2 Quartz filters (R-100); 1 coated with sodium carbonate, 1 uncoated	225-9032	10
Nitrobenzene	NIOSH 2017 ¥	2 Glass Fiber filters; sulfuric acid	225-9004 ¥	10
Ozone	OSHA ID-214	2 Glass Fiber filters; nitrite-impregnated	225-9014 §	10
Peracetic acid (PAA)	OSHA PV2321	1 **25-mm** Quartz filter (R-100); titanium oxysulfate hydrate **(in 25-mm cassette)**	225-9037 §•	10
Phenylenediamine (o-, m-, p-)	OSHA 87	2 Glass Fiber filters; sulfuric acid	225-9004	10
Phosphine	OSHA 1003	1 Glass Fiber filter; 1 polyester filter coated with mercuric chloride	225-9018 †§	10
Phosphoric acid	NIOSH 7908	1 Quartz filter (Tissuquartz)	225-9033	10
Phthalic anhydride	OSHA 90	2 Glass Fiber filters, veratrylamine	225-9034 †§	10
Sulfur dioxide	NIOSH 6004 (modified)	1 MCE pre-filter and support/1 cellulose filter and support; sodium carbonate	225-9005	10
Sulfuric acid	NIOSH 7908	1 Quartz filter (Tissuquartz)	225-9033	10
2,4-Toluenediamine	OSHA 65	2 Glass Fiber filters; sulfuric acid	225-9004	10
2,6-Toluenediamine	OSHA 65	2 Glass Fiber filters; sulfuric acid	225-9004	10
o-Tolidine	OSHA 71	2 Glass Fiber filters; sulfuric acid	225-9004	10
Toluene-2,4-diisocyanate and toluene-2,6-diisocyanate	For IFV	1 **25-mm** Glass Fiber filter; 1-(2-pyridyl)piperazine *(filters only, in jar)*	225-9035 †§	10
o-Toluidine	NIOSH 2017 ¥	2 Glass Fiber filters; sulfuric acid	225-9004 ¥	10
Toluidine (o-, m-, p-)	OSHA 73	2 Glass Fiber filters; sulfuric acid	225-9004	10
Trimellitic anhydride	OSHA 98	2 Glass Fiber filters; veratrylamine and di-n-octyl phthalate	225-9010 §	10
Valeraldehyde	OSHA 85	3 Glass Fiber filters; 2,4-dinitrophenylhydrazine and phosphoric acid	225-9020 §	10
m-Xylenediamine (m-XDA, p-XDA)	OSHA 105	2 Glass Fiber filters; sulfuric acid	225-9004	10

* *Coated filters have a limited shelf-life; contact SKC*
† *Made to order due to very limited shelf-life*
Δ *ASTM D5836 and D5932 for 2,4-TDI, 2,6-TDI only*
§ *Storage ≤ 39.2 F (4 C) required*
¥ *Also requires Sorbent Tube Cat. No. 226-15, see page 48*
\# *Collects both vapor and aerosol phases of fluorides*
• *Requires 22-ml threaded midget impinger and sorbent-containing trap. See method for more information.*
‡ *Limited shelf-life, storage ≤ 39.2 F (4 C) required; refrigerated shipping not required. Requires Cat. No. 225-9050; see p. 68.*

Glass Midget Impingers
Collection of Airborne Hazards into Liquids

• TECH TIPS •

▶ Use a trap with impingers to prevent impinger liquid from being drawn into the sample pump. Solid sorbent may be added to a trap when using a volatile collection liquid to protect the pump from vapors. See options below.

SKC Pyrex® glass midget impingers feature graduations that are accurate to within ± 0.5 ml per increment. Serial numbers on both sections of each impinger assist with sample identification and proper part matching. SKC offers three types of glass midget impingers for your applications.

Standard Midget Impinger (25 ml) contains a precisely placed standard nozzle to ensure proper collection.

Special Midget Impinger with Fritted Nozzle (25 ml) increases contact between the air sample and collection liquid. Many NIOSH and OSHA procedures call for this impinger.

Spill-resistant Midget Impinger with Standard Nozzle (25 ml) features an outlet side arm that extends midway down the impinger with capacity for all liquid in the impinger.

Standard nozzle *Fritted nozzle*

Glass Trap Cat. No. 225-22

Plastic Trap Cat. No. 225-22-01

For Sample Pumps
see pages 12-13, 16-19, and 22-23

Glass Impinger Holders

Impingers and traps may be mounted in a holder directly on a sample pump for area sampling or placed in a holster that clips near a worker's breathing zone.

Impinger in personal holster

Impinger in single holder on AirChek 52 Sample Pump

Impinger and trap in double holder on AirChek Touch Series Sample Pump

Glass Midget Impinger	Cat. No.	Qty.
Standard Midget, 25 ml, standard nozzle	225-36-1	ea
Special Midget, 25 ml, fritted nozzle, 170 to 220-micron frit	225-36-2	ea
Spill-resistant Midget, 25 ml, standard nozzle	225-36-4	ea
Spill-resistant Midget, 25 ml, fritted nozzle, 170 to 220-micron frit	225-36-5	ea
Glass Midget Impinger Accessories		
Trap for Midget Impingers, glass trap for area sampling, can be used with or without sorbent, *see above left photo*	225-22	ea
In-line Plastic Traps with sorbent to remove vapors, *see photo at left*	225-22-01	3
Replacement Trap Sorbent, 200 grams, to remove vapors, for use in Cat. Nos. 225-22 and 225-22-01	225-22-02	ea
Holster,* polyester, with a clip for attaching to clothing, *shown above*	225-20	ea
Holders,* for attaching to air sample pump		
Single,* stainless steel, for 1 impinger or 1 trap, *shown above, for use with AirChek 52/Sidekick or Universal pumps*	225-20-01	ea
Double,* stainless steel, for 2 impingers or impinger and trap, *for use with AirChek 52/Sidekick or Universal pumps*	225-20-02	ea
Double,* stainless steel, for 2 impingers or impinger and trap, *shown above, for use with AirChek Touch Series pumps*	225-20-03	ea

* *Not suitable for PFA impingers*

PFA Midget Impingers
Unbreakable Alternative for Collection into Liquids

Savillex semi-opaque single-piece PFA impingers are nearly unbreakable and feature a threaded lid for secure sampling. With a 60-ml reservoir, these PFA impingers allow for a greater volume of liquid to be used when needed. SKC offers PFA impingers in two different port configurations. PFA tube bends are available for connecting impingers. All PFA impingers include ferrule nuts to provide a leak-tight seal.

60-ml PFA Impinger with molded transfer cap
features a vertical port and a side port for horizontal connections.

60-ml PFA Impinger with port transfer cap
includes two vertical ports for close assembly of a sampling train.

ABOUT

Perfluoroalkoxy Alkane
Perfluoroalkoxy alkane (PFA, a fluoropolymer) material is desirable for its inertness to virtually all industrial chemicals and solvents, excellent heat resistance, and use in cryogenic applications. Impingers made of PFA are nearly unbreakable, making them ideal for industrial hygiene applications.

PFA Impinger Holders

Impingers and traps may be mounted in a holder directly on a sample pump for area sampling or placed in a holster that clips near a worker's breathing zone.

Impinger in personal holster

Impinger in single holder on AirChek Touch Series Sample Pump

Impinger in single holder on AirChek 52 Sample Pump

For Sample Pumps
see pages 12-13, 16-19, and 22-23

PFA Midget Impinger	Cat. No.	Qty.
Impinger with 1-piece Molded Transfer Cap, 60-ml capacity, with a 1/4-inch vertical port and a 1/4-inch side port for horizontal connections; includes ferrule nuts	225-0020	ea
Impinger with Port Transfer Cap, 60-ml capacity, with 2 vertical 1/4-inch ports for close assembly of sampling train; includes ferrule nuts	225-0021	ea
PFA Midget Impinger Accessories		
Single Holder for PFA Impinger,† stainless steel, attaches to sample pump		
for AirChek 52/Sidekick or Universal pumps, *shown above*	225-0026	ea
for AirChek Touch Series pumps, *shown above*	225-20-04	ea
Holster for PFA Impinger,† polyester, with a clip for attaching to clothing, *shown above*	225-0027	ea
In-line Plastic Traps with sorbent to remove vapors, *shown at right*	225-22-01	3
Replacement Trap Sorbent, 200 grams, to remove vapors, *for use in Cat. Nos. 225-22 and 225-22-01*	225-22-02	ea
180-degree PFA Tube Bend, 1/4-inch diameter x 8-inch length, used to connect 2 PFA impingers, *for use with Cat. No. 225-0021 only*	225-0022	ea
90-degree PFA Tube Bend, 1/4-inch diameter x 6-inch length, used to connect a PFA impinger to a sample pump, *for use with Cat. No. 225-0020 only*	225-0023	ea

† *Not suitable for glass impingers*

Plastic Trap Cat. No. 225-22-01

The GV110 Piston Pump

A Single Stroke of Genius for Sampling with Detector Tubes

• TECH TIPS •

- To ensure optimum accuracy, check all detector tube hand pumps for leaks on a regular basis.

GV700 One-hand Pump Operation
The GV700 One-hand Adapter threads onto the GV110 pump to provide convenient one-hand pump operation. The tube holder mounts onto the adapter. The adapter features a slide valve that opens and closes at the push of a button. Closing the valve prevents airflow into the pump and allows the user to pull back the pump handle without taking a sample. After an open tube has been inserted into the tube holder, the sample is taken by opening the valve with another push of the button. The adapter can be left in the open position to allow normal use of the pump. It's simple, accurate, and reliable just like the GV110 pump. *See below right for ordering information.*

- **Built-in stroke counter tracks up to 10 strokes**
- **Handle lockable in full-stroke position to draw 100 ml of air or half-stroke position to draw 50 ml of air**
- **Flow finish indicator ensures precise sample volumes**
- **Contoured shape and soft elastomer-covered body for a secure, comfortable grip**
- **Weighs only 9.4 ounces (0.27 kg)**
- **Integral tube tip breaker and tip storage bin**
- **Simple, always ready, and intrinsically safe**
- **Large Gastec Detector Tube inventory available immediately**
- **Factory-trained product specialists for support**

The Gastec GV110 precision piston pump offers simple, accurate syringe-like technology for gas and vapor measurements. Designed for use with Gastec grab sample detector tubes, one complete stroke draws a 100-ml air sample. A flow finish indicator shows completion of full or half strokes, while the built-in stroke counter eliminates the risk of miscounting. An integral tube tip breaker and tip storage bin add convenience. The GV110 pump and several boxes of tubes can be transported easily in the semi-rigid carry case with adjustable case strap that can be worn over the shoulder or secured to a belt.

Automatic stroke counter tracks up to 10 strokes

Flow finish indicator ensures precise sample volumes

For Gastec Passive Color Dosimeter Tubes
see page 95

Description	Cat. No.	Qty.
GV110 Deluxe Pump Kit includes GV110 Piston Pump, semi-rigid carry case with strap, lubricant, and 3 tube holder O-rings	810-GV110	ea
Accessories		
Lubricant	810-1002	ea
Shoulder Bag Carry Case	810-815	ea
GV700 One-hand Adapter, *see above left for more information*	810-GV700	ea

Grab Sample Tubes for Gastec Piston Pump

Gas or Vapor to be measured	Measuring Range (ppm)	Cat. No.	Tests
Acetaldehyde	5 - 750	810-92*	10
Acetaldehyde	2.5 - 100	810-92M*	10
Acetaldehyde	1 - 20	810-92L*	10
Acetic acid	1 - 100	810-81	10
Acetic acid	0.125 - 25	810-81L*	10
Acetic anhydride	0.6 - 15	810-81	10
Acetic anhydride	0.15 - 6	810-81L*	10
Acetone	0.05 - 2%	810-151	10
Acetone	50 - 12,000	810-151L*	10
Acetone cyanohydrin	2.5 - 60	810-12L	10
Acetonitrile	3 - 180	810-52	10
Acetylene	0.05 - 4%	810-171	10
Acetylene	0.075 - 3.6%	810-103	9
Acetylene	32.5 - 1040	810-172	10
Acetylene dichloride (*see 1,2-dichloroethylene*)			
Acid gases	1 - 80	810-80	10
Acrolein	3.3 - 800	810-93	10
Acrylic acid	2 - 50	810-81	10
Acrylic acid	0.45 - 18	810-81L*	10
Acrylonitrile	2 - 360	810-191	5
Acrylonitrile	0.1 - 18	810-191L	5
Acrylonitrile	600 - 14,400	810-102L	10
Aliphatic hydrocarbons	6 - 3000	810-140	10
Allyl amine	8.5 - 170	810-180	10
Allyl amine	0.4 - 8	810-180L	10
Allyl isothiocyanate	5 - 200	810-149	10
Allyl chloride	0.1 - 3.4%	810-101L	10
Allyl chloride	3.2 - 48	810-131L	5
Amines	5 - 100	810-180	10
Amines	0.5 - 10	810-180L	10
2-Aminoethanol (*see ethanolamine*)			
Ammonia	0.2 - 32%	810-3H	10
Ammonia	0.05 - 3.52%	810-3HM	10
Ammonia	10 - 1000	810-3M	10
Ammonia	2.5 - 200	810-3LA	10
Ammonia	0.5 - 78	810-3L	10
Ammonia	1.5 - 30	810-180	10
Amyl acetate	10 - 200	810-147	10
Aniline	1.25 - 60	810-181	10
Arsine	0.04 - 10	810-19LA	10
Aromatic hydrocarbons	0.4 - 200	810-120	10
Benzaldehyde	4 - 92	810-91L	10
Benzene	2 - 312	810-121S	5
Benzene	2.5 - 120	810-121	10
Benzene	1 - 100	810-121SL	5
Benzene	0.1 - 65	810-121L	5
Benzene	0.2 - 66	810-121SP	5
Benzene	0.03 - 0.6%	810-171	10
Benzyl bromide	10 - 100	810-136L	5
Benzyl chloride	1.6 - 20	810-132L	10
Boron trichloride	2.25 - 54	810-12L	10
Bromine	0.05 - 0.8	810-8LA	10
Bromochloromethane (*see chlorobromomethane*)			
Bromoform	1 - 50	810-136L	5
1,3-Butadiene	50 - 800	810-174	10
1,3-Butadiene	2.5 - 100	810-174L	10
1,3-Butadiene	0.5 - 5	810-174LL*	5
Butane	25 - 1400	810-104	10
Butane	0.035 - 1.68%	810-103	9
1-Butanol	10 - 150	810-114	10
2-Butanol	5 - 150	810-115	10
2-Butanone (*see methyl ethyl ketone [MEK]*)			
Butyl acetate	0.05 - 0.8%	810-142	10
Butyl acetate	10 - 300	810-142L	10
tert-Butyl alcohol	500 - 12,000	810-102L	10
Butyl acrylate	7 - 210	810-142L	10
Butylamine	8 - 160	810-180	10
Butylamine	0.55 - 11	810-180L	10
tert-Butylamine	5.5 - 110	810-180	10
n-Butyl bromide	24 - 360	810-136H	5
n-Butyl bromide	10 - 100	810-136L	5
n-Butyl bromide	1 - 43.2	810-136LA	5
Butyl mercaptan	0.16 - 12.8	810-70L	10
tert-Butyl mercaptan	2.5 - 150 mg/m³	810-75	10
tert-Butyl mercaptan	1.25 - 250 mg/m³	810-75N	10
tert-Butyl mercaptan	0.5 - 30 mg/m³	810-75L*	10
tert-Butyl mercaptan	0.5 - 39 mg/m³	810-75LN*	10
tert-Butyl mercaptan	1 - 15 mg/m³	810-77*	5
tert-Butyl mercaptan	0.1 - 8	810-70L	10
Butyric acid	0.325 - 13	810-81L	10
Butyronitrile	6 - 180	810-191L	5
Carbon dioxide	2.5 - 40%	810-2HH	10
Carbon dioxide	0.5 - 20%	810-2H	10
Carbon dioxide	0.13 - 6%	810-2L	10
Carbon dioxide	300 - 5000	810-2LL	10
Carbon dioxide	100 - 4000	810-2LC	10
Carbon disulfide	15 - 5120	810-13M	5
Carbon disulfide	0.63 - 100	810-13	5
Carbon disulfide	0.1 - 8.1	810-13L	5
Carbon monoxide	1 - 50%	810-1HH	10
Carbon monoxide	0.1 - 10%	810-1H	10
Carbon monoxide	0.05 - 4%	810-1M	10
Carbon monoxide	25 - 2000	810-1LM	10
Carbon monoxide	2.5 - 2000	810-1L	10
Carbon monoxide	8 - 1000	810-1LA	10
Carbon monoxide	5 - 600	810-1LK	10
Carbon monoxide	5 - 100	810-1LKC	5
Carbon monoxide	5 - 50	810-1LL	10
Carbon monoxide	1 - 30	810-1LC	10
Carbon tetrachloride	0.5 - 60	810-134*Δ	5
Carbon tetrachloride	0.25 - 11	810-134L*Δ	5
Carbonyl chloride (*see phosgene*)			
Carbonyl sulfide	5 - 200	810-21*	5
Carbonyl sulfide	2 - 125	810-21LA*	5
Chlorine	0.25 - 10%	810-8HH	10
Chlorine	25 - 1000	810-8H	10
Chlorine	0.1 - 16	810-8LA	10
Chlorine	0.025 - 2	810-8LL*Δ	10

* *Store tubes at 33 to 40 F (> 0 to 4.4 C)*
Δ *One-year shelf-life*

• TECH TIPS •

- Detector tubes are factory calibrated for a specific flow dynamic provided by a system's pump. Always use detector tubes with the pump specified by the manufacturer. Interchanging brands of pumps and tubes can significantly reduce accuracy.
- Gastec grab sample detector tubes can be used at temperatures from 32 to 104 F (0 to 40 C). For higher temperature applications, *see the Hot Probe on page 79.*

Grab Sample Tubes for Gastec Piston Pump

For Gastec Passive Color Dosimeter Tubes
see page 95

Gas or Vapor to be measured	Measuring Range (ppm)	Cat. No.	Tests
Chlorine	0.7 - 14	810-80	10
Chlorine dioxide	0.1 - 10	810-23M	10
Chlorine dioxide	0.025 - 1.2	810-23L*Δ	10
Chlorine dioxide	45 - 450	810-8H	10
Chlorine dioxide	0.3 - 4.8	810-8LA	10
Chlorobenzene	2 - 500	810-126	10
Chlorobenzene	0.5 - 43	810-126L*	10
Chlorobromomethane	22 - 110	810-135	5
Chlorobromomethane	18 - 270	810-136H	5
Chlorobromomethane	11 - 110	810-136L	5
Chlorobromomethane	0.7 - 12.6	810-136LA	5
Chlorocyclohexane	50 - 1200	810-102L	10
Chlorodifluoromethane (R22)	0.1 - 2.4%	810-51H ‡	5
Chlorodifluoromethane (R22)	25 - 1000	810-51 ‡	5
Chlorodifluoromethane (R22)	2.5 - 135	810-51L ‡	5
1-Chloro-2,3-epoxy propane (*see epichlorohydrin*)			
2-Chloroethanol (*see ethylene chlorohydrin*)			
Chloroethylene (*see vinyl chloride*)			
Chloroform	4 - 400	810-137	5
Chloroform	0.5 - 30	810-137LA*Δ	5
Chloroform	0.3 - 4.5	810-137LL*Δ	5
Chloropicrin	2.5 - 60	810-134	5
Chloropicrin	0.28 - 5.5	810-134L	5
Chloropicrin	0.045 - 22	810-233Δ	5
2-Chloro-1,1,1,2-tetrafluoroethane (R124)	45 - 1800	810-51‡	5
m-Cresol	1 - 25	810-61*	10
o-Cresol	0.35 - 67.5	810-61*	10
p-Cresol	1 - 25	810-61*	10
Cumene	2 - 100	810-122L	10
Cyclohexane	0.015 - 1.2%	810-102H	10
Cyclohexane	60 - 1440	810-102L	10
Cyclohexanol	5 - 100	810-118	10
Cyclohexanone	2 - 72	810-154*	10
Cyclohexanone	10 - 470	810-91L	10
Cyclohexene	0.05 - 0.8%	810-151	10
Cyclohexylamine	7 - 140	810-180	10
Cyclohexylamine	0.5 - 10	810-180L	10
Cymene	5.6 - 224	810-141L	10
n-Decane	200 - 6000	810-105	10
Diacetone alcohol	2.5 - 100	810-154	10
Diacetyl	25 - 1500	810-92	10
1,2-Diaminoethane (*see ethylenediamine*)			
Diborane	0.02 - 5	810-22	10
1,1-Dibromoethane	7 - 70	810-136L	5
1,2-Dibromoethane (*see ethylene dibromide*)			
Dibromomethane	5 - 50	810-136L	5
Di-n-butylamine	5 - 100	810-180	10
Di-n-butylamine	0.4 - 8	810-180L	10
m-Dichlorobenzene	2.5 - 300	810-127	10
o-Dichlorobenzene	2.5 - 300	810-127	10

* *Store tubes at 33 to 40 F (> 0 to 4.4 C)*
Δ *One-year shelf-life*

Gas or Vapor to be measured	Measuring Range (ppm)	Cat. No.	Tests
p-Dichlorobenzene	2.5 - 300	810-127	10
Dichlorodifluoromethane (R12)	325 - 7800	810-51H‡	5
Dichlorodifluoromethane (R12)	11 - 440	810-51‡	5
Dichlorodifluoromethane (R12)	1.8 - 97.2	810-51L‡	5
1,1-Dichloroethane	90 - 450	810-135	5
1,2-Dichloroethane	1 - 39	810-232	5
1,1-Dichloroethylene (*see vinylidene chloride*)			
1,2-Dichloroethylene	5 - 250	810-139*	10
1,2-Dichloroethylene	80 - 800	810-132HA	10
1,2-Dichloroethylene	0.375 - 6	810-132LL	10
1,1-Dichloro-1-fluoroethane (R141b)	10 - 1000	810-51‡	5
1,1-Dichloro-1-fluoroethane (R141b)	1.1 - 22	810-51L‡	5
Dichloromethane (*see methylene chloride*)			
Dichloropentafluoropropane (R225)	20 - 800	810-51‡	5
Dichloropentafluoropropane (R225)	1.4 - 28	810-51L‡	5
1,2-Dichloropropane (*see propylene dichloride*)			
1,3-Dichloropropene	45 - 450	810-132HA	10
1,3-Dichloropropene	0.5 - 10	810-131LA	5
1,2-Dichloro-1,1,2,2-tetrafluoroethane (R114)	475 - 11400	810-51H‡	5
1,2-Dichloro-1,1,2,2-tetrafluoroethane (R114)	20 - 800	810-51‡	5
1,2-Dichloro-1,1,2,2-tetrafluoroethane (R114)	1.8 - 97.2	810-51L‡	5
2,2-Dichloro-1,1,1-trifluoroethane (R123)	14 - 1600	810-51‡	5
2,2-Dichloro-1,1,1-trifluoroethane (R123)	1.4 - 28	810-51L‡	5
Dichlorvos	0.11 - 1.8	810-132LL	10
Diethylamine	5.5 - 110	810-180	10
Diethylamine	0.45 - 9	810-180L	10
Diethylaminoethanol	0.6 - 12	810-180L	10
Diethyl benzene	2 - 150	810-122L	10
Diethylenetriamine	0.95 - 19	810-180L	10
Diethylethanolamine	6 - 120	810-180	10
Diethyl ether (*see ethyl ether*)			
Diisobutylene	45 - 540	810-121	10
Diisobutyl ketone	0.2 - 1%	810-102L	10
Diisobutyl ketone	0.58 - 29	810-91L	10
Diisopropylamine	5 - 100	810-180	10
Diisopropylamine	0.3 - 6	810-180L	10
Diisopropyl benzene	10 - 400	810-141L	10
N,N-Dimethylacetamide	1.5 - 240	810-184	10

‡ *Pyrotec tube requires Pyrotec Pyrolyzer Cat. No. 810-840; see page 79.*

Grab Sample Tubes for Gastec Piston Pump

Gas or Vapor to be measured	Measuring Range (ppm)	Cat. No.	Tests
1,2-Dimethoxyethane	100 - 1030	810-114	10
Dimethylamine	1.2 - 19.2%	810-3H	10
Dimethylamine	5.5 - 110	810-180	10
Dimethylamine	0.45 - 9	810-180L	10
2-Dimethylaminoethanol	0.65 - 13	810-180L	10
Dimethylaminopropylamine	8 - 160	810-180	10
Dimethylaminopropylamine	0.6 - 12	810-180L	10
N,N-Dimethylaniline	2.5 - 30	810-181	10
Dimethylbenzene (*see xylene*)			
Dimethyl disulfide	0.3 - 6	810-53	5
Dimethylethanolamine	6.5 - 130	810-180	10
N,N-Dimethylethylamine	4 - 80	810-180	10
N,N-Dimethylethylamine	0.3 - 6	810-180L	10
N,N-Dimethyl formamide	0.8 - 90	810-183	10
2,6-Dimethyl-4-heptanone (*see diisobutyl ketone*)			
Dimethylhydrazine	0.1 - 2	810-185	10
Dimethyl sulfide	0.15 - 10	810-53‡	5
Dimethyl sulfide	1 - 15 mg/m³	810-77	5
1,4-Dioxane	25 - 140	810-159	10
1,4-Dioxane	0.1 - 6%	810-163	10
Dipropylamine	4 - 80	810-180	10
Dipropylamine	0.35 - 7	810-180L	10
Divinyl benzene	1 - 15	810-124L	10
Divinyl methoxysilane	6.5 - 25	810-113L	10
Enflurane (2-chloro-1,1,2-trifluoroethyl difluoromethyl ether)	100 - 1230	810-51‡	5
Enflurane (2-chloro-1,1,2-trifluoroethyl difluoromethyl ether)	25 - 145	810-51L‡	5
Epichlorohydrin	1.2 - 120	810-163L	5
1,2-Epoxypropane (*see propylene oxide*)			
Ethanethiol (*see ethyl mercaptan*)			
Ethanol	0.01 - 7.5%	810-112	10
Ethanol	50 - 2000	810-112L	10
Ethyl alcohol (*see ethanol*)			
Ethanolamine	1.95 - 39	810-180L	10
Ethyl acetate	0.1 - 1.5%	810-141	10
Ethyl acetate	20 - 800	810-141L	10
Ethyl acrylate	8 - 320	810-141L	10
Ethylamine	5 - 100	810-180	10
Ethylamine	0.45 - 9	810-180L	10
Ethyl benzene	11 - 330	810-122	10
Ethyl benzene	1 - 70	810-122L	10
p-Ethyl benzylchloride	2.5 - 50	810-131LA	5
Ethyl bromide	2.5 - 200	810-136L	5
Ethyl chloroformate	7 - 140	810-131LA	5
Ethyl chloride	15 - 150	810-138	5
Ethylene	25 - 1680	810-172	10
Ethylene	0.2 - 100	810-172L	10
Ethylene	0.35 - 16.8%	810-103	9
Ethylene	0.1 - 2%	810-171	10
Ethylene chlorohydrin	80 - 200	810-111L	10
Ethylenediamine	14 - 280	810-180	10
Ethylenediamine	0.9 - 18	810-180L	10

* *Store tubes at 33 to 40 F (> 0 to 4.4 C)*

Δ *One-year shelf-life*

Gas or Vapor to be measured	Measuring Range (ppm)	Cat. No.	Tests
Ethylene dibromide	14 - 210	810-136H	5
Ethylene dibromide	8 - 80	810-136L	5
Ethylene dichloride	1 - 39	810-232	5
Ethylene dichloride	400 - 2000	810-135	5
Ethylene dichloride	104 - 1040	810-135L	5
Ethylene glycol	10 - 100 mg/m³	810-165L*Δ	5
Ethylene glycol monobutyl ether	200 - 1000	810-113L	10
Ethylene glycol monobutyl ether	60 - 400	810-113LL	10
Ethylene glycol monoethyl ether	110 - 1000	810-113L	10
Ethylene glycol monoethyl ether	46 - 460	810-113LL	10
Ethylene glycol monomethyl ether	75 - 760	810-113L	10
Ethylene glycol monomethyl ether	44 - 440	810-113LL	10
Ethylene glycol monomethyl ether acetate (*see 2-methoxyethyl acetate*)			
Ethylene oxide	0.05 - 3%	810-163	10
Ethylene oxide	0.4 - 550	810-163L*Δ	5
Ethylene oxide	0.1 - 10	810-163LL*Δ	5
Ethyl ether	0.04 - 1%	810-161	10
Ethyl ether	10 - 1120	810-161L	10
Ethylidene chloride (*see 1,1-dichloroethane*)			
Ethyl mercaptan	0.5 - 120	810-72	10
Ethyl mercaptan	0.2 - 75	810-72L	10
Ethyl mercaptan	0.15 - 57.5	810-72LN	10
Ethyl mercaptan	0.5 - 120	810-70	10
Ethyl mercaptan	0.1 - 8	810-70L	10
Ethyl mercaptan	100 - 3800	810-71H	10
N-Ethyl morpholine	5 - 100	810-180	10
N-Ethyl morpholine	0.3 - 6	810-180L	10
Fluorine	0.5 - 50	810-17	10
Fluorotrichloromethane (*see trichlorofluoromethane [R11]*)			
Formaldehyde	8 - 6400	810-91M*	10
Formaldehyde	2 - 100	810-91	5
Formaldehyde	0.1 - 45	810-91L*Δ	10
Formaldehyde	0.05 - 1	810-91LL*Δ	10
Formic acid	5.2 - 130	810-81	10
Formic acid	0.5 - 20	810-81L	10
Furfural	2 - 30	810-154	10
Gasoline (petrol)	0.015 - 1.2%	810-101	10
Gasoline (petrol)	30 - 2000	810-101L	10
Gasoline (petrol)	0.1 - 2%	810-1M	10
Halothane (2-bromo-2-chloro-1,1,1-trifluoroethane)	800 - 6400	810-51H‡	5
Halothane (2-bromo-2-chloro-1,1,1-trifluoroethane)	240 - 960	810-51‡	5
Halothane (2-bromo-2-chloro-1,1,1-trifluoroethane)	3 - 60	810-51L‡	5
Heptane	0.015 - 1.2%	810-101	10
Heptane	30 - 2000	810-101L	10
Heptane	0.035 - 1.68%	810-103	9

‡ *Pyrotec tube requires Pyrotec Pyrolyzer Cat. No. 810-840; see page 79.*

• TECH TIPS •

- Use detector tubes for screening and field surveys. Use validated methods for compliance sampling.
- **For detector tube reading:**
  - When the end of the color change layer is flat, read the value at the end of the layer.
  - When the end of the color change layer is slanted, read the value in the middle of the slant.
  - When the demarcation of the color change layer is pale, read the value in the middle between the dark layer end and pale layer end.
- **To aid reading results:**
  - Hold the tube against a light background.
  - Compare the tube against an unused tube from the same box.

Grab Sample Tubes for Gastec Piston Pump

• TECH TIPS •

- In cases where gas concentration may be higher than expected and the stain inside the detector tube exceeds the detection layer, select a higher concentration detector tube for the same gas or vapor, or dilute the sample in some other way.
- While sampling in areas of high gas concentrations, the gas can exceed the detector tube's absorption capacity and may be drawn into the pump. Not only is this harmful to the pump's internal components but the gas is exhausted in the direction of the pump user. Take safety precautions to avoid exposure to hazardous gas.
- If you suspect that gas has exceeded the detector tube's absorption capacity and been drawn into the pump, stroke the handle several times in clean air to replace the residue gas inside the pump.

For the GV110 Piston Pump
see page 72

Gas or Vapor to be measured	Measuring Range (ppm)	Cat. No.	Tests
Heptane	90 - 2700	810-105	10
Hexamethylenediamine	1.55 - 31	810-180L	10
Hexane	0.015 - 1.2%	810-102H	10
Hexane	3.5 - 1200	810-102L	10
Hexane	0.025 - 1.2%	810-103	9
Hexane	80 - 2400	810-105	10
Hexone (*see methyl isobutyl ketone*)			
2-Hexyl alcohol	60 - 2400	810-141L	10
Hexylamine	9 - 180	810-180	10
Hexylamine	0.65 - 13	810-180L	10
Hydrazine	0.05 - 2	810-185	10
Hydrocarbons (higher class)	100 - 3000	810-105	10
Hydrocarbons (lower class)	0.05 - 2.4%	810-103	9
Hydrogen	0.5 - 2%	810-30	10
Hydrogen bromide	0.8 - 16	810-15L	10
Hydrogen chloride	50 - 5000	810-14R	10
Hydrogen chloride	10 - 1000	810-14M	10
Hydrogen chloride	0.2 - 76	810-14L	10
Hydrogen chloride	8 - 160	810-80	10
Hydrogen chloride	1.5 - 30%	810-8HH	10
Hydrogen cyanide	0.05 - 1.6%	810-12H	10
Hydrogen cyanide	17 - 2400	810-12M	10
Hydrogen cyanide	0.5 - 150	810-12L	10
Hydrogen cyanide	0.2 - 10	810-12LL	10
Hydrogen fluoride	0.25 - 100	810-17	10
Hydrogen fluoride	0.09 - 72	810-17L	10
Hydrogen fluoride	0.05 - 24	810-17LL	10
Hydrogen peroxide	0.5 - 10	810-32	10
Hydrogen sulfide	1 - 40%	810-4HT	10
Hydrogen sulfide	0.25 - 20%	810-4HP	10
Hydrogen sulfide	0.1 - 4%	810-4HH	10
Hydrogen sulfide	10 - 4000	810-4H	10
Hydrogen sulfide	25 - 1600	810-4HM	10
Hydrogen sulfide	12.5 - 500	810-4M	10
Hydrogen sulfide	1 - 240	810-4L	10
Hydrogen sulfide	0.25 - 120	810-4LL	10
Hydrogen sulfide	1 - 40	810-4LK	10
Hydrogen sulfide	0.5 - 12	810-4LB	10
Hydrogen sulfide	0.05 - 4	810-4LT*	10
Hydrogen sulfide	SO_2: 0.25 - 20 H_2S: 1.25 - 120	810-45S	5
Hydrogen sulfide + Sulfur dioxide (total quantification)	0.02 - 8%	810-45H	10
4-Hydroxy-4-methyl-2-pentanone (*see diacetone alcohol*)			
Iodine	0.2 - 12	810-9L	10
Iodine	0.12 - 2.4	810-80	10
Isoamyl acetate	10 - 200	810-148	10
Isoamyl alcohol	5 - 300	810-117	10
Isobutane	0.035 - 1.68%	810-103	9
Isobutane	55 - 3080	810-104	10
Isobutene	0.07 - 2.2%	810-101L	10
Isobutyl acetate	10 - 300	810-144	10
Isobutyl acrylate	2.6 - 78	810-142L	10
Isobutyl alcohol	4 - 150	810-116	10
Isooctane	0.027 - 0.54%	810-101	10

* *Store tubes at 33 to 40 F (> 0 to 4.4 C)*

Gas or Vapor to be measured	Measuring Range (ppm)	Cat. No.	Tests
Isopentane	0.045 - 2.16%	810-103	9
Isopentyl acetate (*see isoamyl acetate*)			
Isopentyl alcohol (*see isoamyl alcohol*)			
Isophorone	2 - 30	810-154	10
Isopropyl acetate	10 - 500	810-146	10
Isopropyl alcohol	0.02 - 5.0%	810-113	10
Isopropyl alcohol	20 - 800	810-113L	10
Isopropyl alcohol	20 - 460	810-113LL	10
Isopropyl amine	5.5 - 110	810-180	10
Isopropyl amine	0.45 - 9	810-180L	10
Isopropyl ether	18 - 720	810-141L	10
Isopropyl ether	0.018 - 0.45%	810-161	10
Isopropyl mercaptan	10 - 240	810-70	10
Isovaleric acid	2 - 50	810-81	10
Isovaleric acid	0.38 - 15	810-81L	10
LPG (liquified petroleum gas)	0.02 - 0.8%	810-100A	10
Maleic anhydride	0.8 - 20	810-81	10
Mercaptans	0.5 - 120	810-70	10
Mercaptans	0.1 - 8	810-70LN	10
2-Mercaptoethanol	0.5 - 7.5	810-75L	10
Mercury vapor	0.05 - 13.2 mg/m^3	810-40	10
Mesityl oxide	27 - 1080	810-141L	10
Methacrylic acid	1.8 - 45	810-81	10
Methacrylic acid	0.35 - 14	810-81L	10
Methacrylonitrile	0.2 - 32	810-192	5
Methaldehyde	0.065 - 3.25	810-91L	10
Methanethiol (*see methyl mercaptan*)			
Methanol	0.002 - 6.0%	810-111	10
Methanol	20 - 1000	810-111L	10
Methanol	2 - 62	810-111LL	10
2-Methoxyethyl acetate	300 - 1300	810-113L	10
1-Methoxy-2-propanol	26 - 260	810-113LL	10
Methyl alcohol (*see methanol*)			
Methyl acrylate	8 - 320	810-141L	10
2-Methyl allyl chloride	2.8 - 55	810-131LA	5
Methylamine	5 - 100	810-180	10
Methylamine	0.5 - 10	810-180L	10
N-Methyl aniline	3.5 - 42	810-181	10
Methyl bromide	10 - 600	810-136H	5
Methyl bromide	2.5 - 200	810-136L	5
Methyl bromide	1 - 36	810-136LA	5
Methyl bromide	0.1 - 3	810-136LL	5
2-Methyl-3-butenenitrile	0.4 - 12	810-191L	5
Methyl chloride	12 - 480	810-51‡	5
Methyl chloride	1.6 - 86.4	810-51L‡	5
Methyl chloroform (*see 1,1,1-trichloroethane*)			
Methyl chloroformate	58 - 1160	810-131LA	5
Methylcyclohexane	0.04 - 0.84%	810-102H	10
Methylcyclohexanol	5 - 100	810-119	10
Methylcyclohexanone	2 - 100	810-155*	10
Methylene chloride	30 - 500	810-138	5
Methylene chloride	4 - 150	810-138L	5
Methylene chloride	1 - 54	810-51L	5
Methylene iodide	0.22 - 22	810-121L	5

‡ *Pyrotec tube requires Pyrotec Pyrolyzer Cat. No. 810-840; see page 79.*

Grab Sample Tubes for Gastec Piston Pump

Gas or Vapor to be measured	Measuring Range (ppm)	Cat. No.	Tests
Methyl ether	0.034 - 0.85%	810-161	10
Methyl ethyl ketone	0.02 - 0.6%	810-152	10
Methyl ethyl ketone	10 - 384	810-152L*	5
Methyl ethyl ketone	21 - 1680	810-151L	10
Methyl hydrazine	0.6 - 12	810-185	10
Methyl iodide	100 - 34,800	810-230H	10
Methyl iodide	0.5 - 108	810-230*	10
Methyl iodide	0.32 - 32	810-121L	5
Methyl isobutyl ketone	0.05 - 0.6%	810-153	10
Methyl isobutyl ketone	2.5 - 130	810-153LΔ	10
Methyl isothiocyanate	0.07 - 25	810-234L	5
Methyl isothiocyanate	50 - 400	810-141L	10
Methyl mercaptan	20 - 2700	810-71H	10
Methyl mercaptan	0.25 - 140	810-71	10
Methyl mercaptan	0.35 - 84	810-70	10
Methyl mercaptan	0.1 - 8	810-70L	10
Methyl methacrylate	10 - 500	810-149	10
N-Methyl morpholine	5 - 100	810-180	10
N-Methyl morpholine	0.3 - 6	810-180L	10
4-Methyl pyridine	0.38 - 10.5	810-182	10
N-Methyl pyrrolidone	13.5 - 270	810-180	10
Methyl tert-Butyl ether (MTBE)	10 - 660	810-166	10
Monochlorobenzene (*see chlorobenzene*)			
Morpholine	9 - 180	810-180	10
Morpholine	0.5 - 10	810-180L	10
Naphthalene	0.5 - 14	810-60	10
Nitric acid	0.1 - 40	810-15L	10
Nitric acid	5 - 100	810-80	10
Nitroethane	4 - 240	810-52	10
Nitrogen dioxide	0.5 - 125	810-9L	10
Nitrogen dioxide	2.5 - 200	810-10	5
Nitrogen dioxide	0.2 - 4	810-80	10
Nitrogen dioxide	0.5 - 30	810-52	10
Nitrogen oxide	2.5 - 200	810-10	5
Nitrogen oxides	50 - 2500	810-11HA	10
Nitrogen oxides	5 - 625	810-11S	10
Nitrogen oxides	0.03 - 15	810-11L	10
Nitromethane	5 - 300	810-52‡	10
1-Nitropropane	4.2 - 252	810-52‡	10
2-Nitropropane	3.7 - 222	810-52‡	10
Nitrotrichloromethane (*see chloropicrin*)			
Nonane	130 - 3900	810-105	10
Octane	0.036 - 0.72%	810-101	10
Octane	100 - 3000	810-105	10
Oxygen	3 - 24%	810-31B	5
Ozone	4 - 400	810-18M	10
Ozone	0.025 - 6	810-18L	10
Pentachloroethane	40 - 500	810-133L	10
1,3-Pentadiene	250 - 4000	810-174	10
1,3-Pentadiene	42.5 - 850	810-174L	10
Pentamethylenediamine	0.75 - 15	810-180L	10
n-Pentane	30 - 1680	810-104	10
n-Pentane	0.0375 - 1.8%	810-103	9
2-Pentenenitrile	0.5 - 15	810-193	5
2-Pentenenitrile	0.24 - 7.2	810-191L	5
3-Pentenenitrile	0.4 - 12	810-191L	5
Pentyl acetate (*see amyl acetate*)			
Perchloroethylene (*see tetrachloroethylene*)			
Petroleum benzine	0.5 - 28 mg/L	810-106	10
Petroleum distillates (*see gasoline [petrol]*)			
Petroleum ether	0.5 - 28 mg/L	810-106	10
Petroleum naphtha	0.5 - 28 mg/L	810-106	10
Phenol	0.4 - 187	810-60*	10
Phenylethylene (*see styrene*)			
Phosgene	0.05 - 20	810-16*	10
Phosphine	200 - 5500	810-7H	10
Phosphine	2.5 - 1000	810-7J	10
Phosphine	2.5 - 100	810-7	10
Phosphine	0.15 - 5	810-7L	10
Phosphine	0.05 - 9.8	810-7LA	10
a-Pinene	95 - 1140	810-121	10
Polytec I	Qualitative	810-107	10
Polytec II	Qualitative	810-25	10
Polytec III	Qualitative	810-26	10
Polytec IV	Qualitative	810-27	10
Polytec V	Qualitative	810-28	10
Propane	0.05 - 2.4%	810-103	9
Propionaldehyde	0.76 - 38	810-91L	10
Propionaldehyde	24 - 1880	810-151L	10
Propionic acid	3 - 75	810-81	10
Propionic acid	0.25 - 10	810-81L	10
Propionitrile	50 - 1200	810-191	5
Propyl acetate	20 - 500	810-145	10
Propyl alcohol	0.04 - 2.5%	810-113	10
Propyl alcohol	130 - 560	810-113L	10
Propyl alcohol	55 - 170	810-113LL	10
Propylamine	6 - 120	810-180	10
Propylamine	0.5 - 10	810-180L	10
n-Propyl bromide	1 - 18	810-136LA	5
Propylene	0.02 - 0.8%	810-100A	10
Propylene dichloride	40 - 800	810-131LA	5
Propylene imine	5.5 - 110	810-180	10
Propylene imine	0.35 - 7	810-180L	10
Propylene oxide	0.065 - 3.9%	810-163	10
Propylene oxide	1 - 100	810-163L	5
Propyl mercaptan	22.5 - 540	810-70	10
Propyl mercaptan	0.12 - 9.6	810-70L	10
Propyl mercaptan	1 - 25	810-70LN	10
Pyridine	0.2 - 36.4	810-182	10
Stoddard solvent	50 - 8000 mg/m³	810-128	10
Styrene	10 - 1500	810-124	10
Styrene	2 - 100	810-124L	10
Styrene	0.15 - 2.3%	810-153	10
Sulfur dioxide	0.05 - 8%	810-5H	10
Sulfur dioxide	20 - 3600	810-5M	10
Sulfur dioxide	1.25 - 200	810-5L	10
Sulfur dioxide	0.5 - 60	810-5LA	10
Sulfur dioxide	0.1 - 25	810-5LC	10
Sulfur dioxide	0.05 - 10	810-5LB	10

* *Store tubes at 33 to 40 F (> 0 to 4.4 C)*

Δ *One-year shelf-life*

‡ *Pyrotec tube requires Pyrotec Pyrolyzer Cat. No. 810-840; see page 79.*

• TECH TIPS •

- Gastec grab sample detector tubes can be used at temperatures from 32 to 104 F (0 to 40 C). For higher temperature applications, *see the Hot Probe on page 79.*
- Do not enter closed spaces without confirming safety. When sampling in closed spaces, determine concentration remotely by using an extension hose or probe connected to the detector tube system. *See page 79.*

Compressed Breathing Air Measurement System

Simply, quickly, and simultaneously measure four kinds of harmful contaminants (CO, CO_2, water vapor, and oil mist) contained in compressed breathing air (cylinder or compressor). No electricity or power source needed!

CG1 System includes measuring device, 4 rubber shrouds, 4 Gastec Airtec Tubes (Cat. Nos. 810-1A, 810-2A, 810-6A, and 810-109AD), stopwatch, tube tip breaker/holder, deep socket, and plastic carry case

Cat. No. 810-CG1

Grab Sample Tubes for Gastec Piston Pump

SKC Provides Factory-direct Savings and Value on Gastec Detector Tubes!

Contact SKC today and ask about our:

- Faster deliveries from our large on-site inventory
- Responsive, personalized customer service

For the GV110 Piston Pump
see page 72

Gas or Vapor to be measured	Measuring Range (ppm)	Cat. No.	Tests
Sulfur dioxide	SO_2: 0.25 - 20 H_2S: 1.25 - 120	810-45S	5
Sulfur dioxide	1.5 - 30	810-80	10
Sulfur dioxide + hydrogen sulfide (total quantification)	0.02 - 8%	810-45H	10
Sulfuric acid	0.5 - 5 mg/m³	810-35	10
Sulfuryl fluoride	1 - 20	810-231†	4
1,1,2,2-Tetrabromoethane	0.92 - 9.2	810-135L	5
1,1,2,2-Tetrachloro-1,2-difluoroethane (R112)	125 - 3000	810-51H‡	5
1,1,2,2-Tetrachloro-1,2-difluoroethane (R112)	7 - 280	810-51‡	5
1,1,2,2-Tetrachloro-1,2-difluoroethane (R112)	1 - 54	810-51L‡	5
1,1,2,2-Tetrachloroethane	2 - 30	810-131L	5
Tetrachloroethylene	7 - 900	810-133HA*	10
Tetrachloroethylene	2 - 220	810-133M*	10
Tetrachloroethylene	1 - 75	810-133L*	10
Tetrachloroethylene	0.1 - 6.6	810-133LL*	10
Tetrachloroethylene	0.075 - 1.5%	810-132HH	10
Tetrachloromethane (*see carbon tetrachloride*)			
Tetrahydrofuran	20 - 800	810-159	10
Tetrahydrofuran	5 - 232	810-159L*Δ	10
Tetrahydrofuran	0.056 - 1.4%	810-161	10
Tetrahydrothiophene	10 - 200	810-76H	5
Tetrahydrothiophene	10 - 100 mg/m³	810-76M	5
Tetrahydrothiophene	1 - 10	810-76	5
Tetramethylenediamine	8.5 - 170	810-180	10
Tetramethylenediamine	0.8 - 16	810-180L	10
Thionyl chloride	1.44 - 21.6	810-5LA	10
Toluene	5 - 690	810-122	10
Toluene	1 - 100	810-122L	10
Toluene	0.02 - 0.8%	810-161	10
Toluol (*see toluene*)			
o-Toluidine	5 - 60	810-181	10
Trichloroacetic acid	1 - 37.5	810-15L	10
1,2,4-Trichlorobenzene	0.65 - 13	810-131LA	5
1,1,1-Trichloroethane (methyl chloroform)	100 - 2000	810-135	5
1,1,1-Trichloroethane (methyl chloroform)	6 - 900	810-135L	5
1,1,1-Trichloroethane (methyl chloroform)	0.06 - 1.2%	810-171	10
1,1,2-Trichloroethane	220 - 750	810-135	5
Trichloroethylene	0.05 - 2.5%	810-132HH	10
Trichloroethylene	20 - 1300	810-132HA*	10
Trichloroethylene	2 - 250	810-132M*	10
Trichloroethylene	1 - 70	810-132L*	10
Trichloroethylene	0.125 - 8.8	810-132LL*	10
Trichlorofluoromethane (R11)	275 - 6600	810-51H‡	5
Trichlorofluoromethane (R11)	8 - 320	810-51‡	5
Trichlorofluoromethane (R11)	0.8 - 43.2	810-51L‡	5
Trichloromethane (*see chloroform*)			
Trichloronitromethane (*see chloropicrin*)			
1,2,3-Trichloropropane	36 - 360	810-135L	5
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	250 - 6000	810-51H‡	5
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	10 - 400	810-51‡	5
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	1 - 54	810-51L‡	5
1,1,1-Trichloro-2,2,2-trifluoroethane (R113a)	200 - 4800	810-51H‡	5
1,1,1-Trichloro-2,2,2-trifluoroethane (R113a)	10 - 400	810-51‡	5
1,1,1-Trichloro-2,2,2-trifluoroethane (R113a)	0.8 - 43.2	810-51L‡	5
Triethylamine	4.5 - 90	810-180	10
Triethylamine	0.3 - 6	810-180L	10
Trimethylamine	25 - 250	810-3M	10
Trimethylamine	3.5 - 70	810-180	10
Trimethylamine	0.25 - 5	810-180L	10
Trimethyl benzene	10 - 300	810-123	10
Valeric acid	0.38 - 15	810-81L	10
Vinyl acetate	5 - 250	810-143	5
Vinyl acetate	0.06 - 0.9%	810-141	10
Vinyl benzene (*see styrene*)			
Vinyl chloride	0.025 - 2%	810-131*	10
Vinyl chloride	0.25 - 54	810-131LA*	5
Vinyl chloride	0.1 - 6.9	810-131L*	5
Vinyl chloride	0.4 - 70	810-131LB*	10
Vinyl cyanide (*see acrylonitrile*)			
Vinylidene chloride	0.4 - 40.6	810-130L*	5
Vinyl trimethoxysilane	6.5 - 25	810-113L	10
Water vapor	0.5 - 32 mg/L	810-6	10
Water vapor	0.05 - 2 mg/L	810-6L	10
Water vapor	3 - 100 lb/MMCF	810-6LP	10
Water vapor	2 - 10 lb/MMCF	810-6LLP	10
Xylene	5 - 625	810-123	10
Xylene	2 - 200	810-123L	10
Xylene	0.1 - 1.2%	810-100A	10
Xylene	2 - 200	810-122L	10

* *Store tubes at 33 to 40 F (> 0 to 4.4 C)*
Δ *One-year shelf-life*
† *Requires Pyrotec Pyrolyzer 860*
‡ *Pyrotec tube requires Pyrotec Pyrolyzer Cat. No. 810-840; see page 79.*

Gastec Sampling Accessories

Extension Hoses

Hoses easily screw onto the GV110 Piston Pump to enable remote sampling and are constructed of synthetic rubber for rugged durability. Narrow ½-inch (1.3-cm) diameter easily fits into tight spaces.

The convenient hose design eliminates the need to factor in hose line air volume when sampling. Sample results can be read directly from the detector tube without additional calculations, charts, or tables.

Includes hose with pump adapter and instructions

5 meter..... Cat. No. 810-351A-5
10 meter..... Cat. No. 810-351A-10
30 meter..... Cat. No. 810-351A-30

Hot Probe

For sampling extremely hot gases, such as those found in flues and smokestacks. When used with the Gastec GV110 Piston Pump, the Hot Probe quickly cools gases as hot as 1112 F (600 C) to ambient temperature. The Hot Probe can be held in any direction and used in hard-to-reach spaces. Requires Hot Proble Holder Cat. No. 810-345A (*below*). *Photo above shows Hot Probe assembled in Holder, Hot Probe, and Hot Probe Holder.*

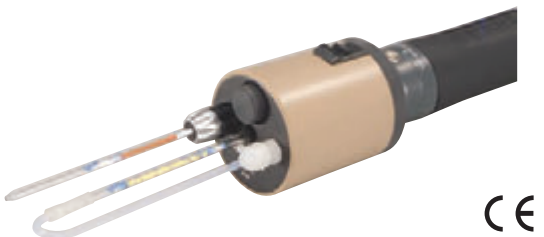
Includes Hot Probe with manual

Cat. No. 810-340

Hot Probe Holder

Use with Hot Probe Cat. No. 810-340 (*above*). Cannot be used with Twin-tubes and Oxygen Tube Cat. No. 810-31B.

Cat. No. 810-345A



Pyrotec Pyrolyzer

Gastec Pyrotec Pyrolyzer System for measuring chlorofluorocarbons is ready to use in seconds — no tools required. Its compact, lightweight design makes it easy to transport and use anytime, anywhere. The pyrolyzer's high-impact plastic construction is corrosion-resistant and rugged. Powered by AA disposable batteries

Includes Pyrotec Pyrolyzer, 4 AA batteries, tube protector, U tube, clamping nut, and instructions. For use with the Gastec GV110 Piston Pump

Cat. No. 810-840

Gastec Tube Handbook

Easy-to-read reference for the occupational health and safety professional

Cat. No. 810-GV100SH

Tube Tip Breaker/Holder

The Tube Tip Holder doubles as a detector tube tip breaker and a storage receptacle for up to 260 broken tips, thereby preventing glass fragments from scattering.

Cat. No. 810-722

SKC PASSIVE SAMPLERS

SKC provides a variety of passive samplers to meet OSHA and EPA methods, including those filled with charcoal, chemically coated sorbents, treated paper tape media, and specialty sorbents for thermal desorption. In addition to validations in agency methods, SKC research chemists have performed in-house validations of passive samplers to meet customer requirements in health care, hydraulic fracturing, general industry, landfills, ambient air, and more.

SCAN ME

VOC 575

Industrial Hygiene Sampling of ppm-Level Organic Vapors

See pages 82-84

UME^{X} 100

Industrial Hygiene, Environmental, and Indoor Air Sampling of Formaldehyde/Other Aldehydes

See page 92

UME^{X} 200

Industrial Hygiene or Environmental Sampling of Nitrogen Dioxide/Sulfur Dioxide

See page 93

UME^{X} 300

Industrial Hygiene and Environmental Ammonia Sampling

See page 93

Elemental Mercury Passive Sampler

Full-shift Industrial Hygiene Sampling and Extended Environmental Sampling

See page 94

Hydrogen Cyanide Passive Sampler

Accurate Determination of Personal Exposure

See page 94

ULTRA Thermal Desorption Passive Sampler

Environmental Sampling of Sub-ppb Level VOCs and SVOCs

See page 96

Passive Thermal Desorption Tubes

Extended ppb-Level Environmental Sampling of Benzene, Other VOCs, and SVOCs

See page 97

VOC 575 Series
Passive Samplers
for ppm-Level Organic Vapors

Top Reasons to Choose VOC Chek® 575

Capacity

- More than twice the sorbent found in other samplers

Sample time

- More sorbent means longer sample times for 8 hours or more for most compounds
- Suitable for 15-minute STEL sampling for some compounds

Savings

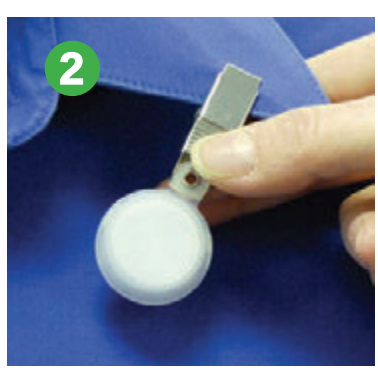
- More sorbent in a single layer and one sampler for an 8-hour shift means fewer analyses

Defensible data

- Documented performance in OSHA diffusive methods and SKC online research reports

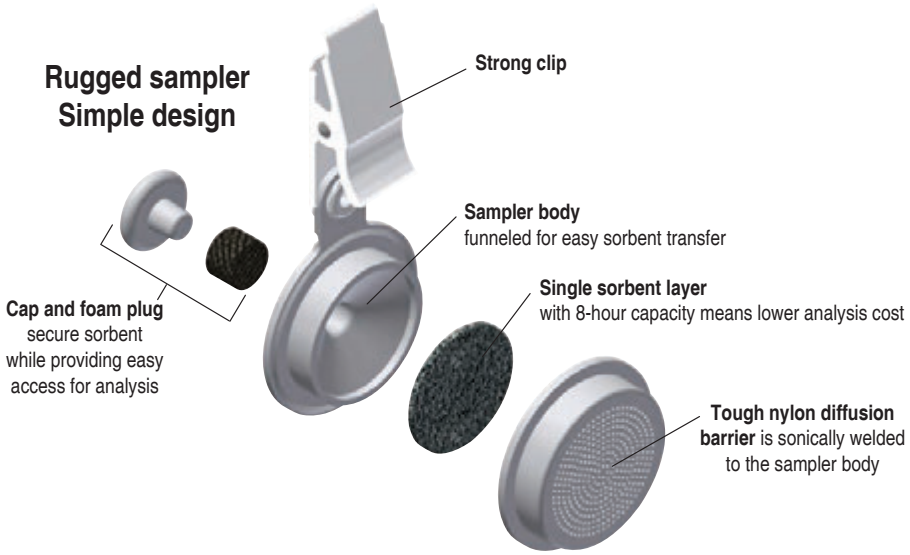
Easy 3-step sampling!

Remove front cap.



Clip in worker's breathing zone to sample.

Cap and record information.



SKC VOC Chek 575 Passive Samplers are listed in OSHA and HSE passive methods!

See table below.

US OSHA and HSE MDHS Active/Passive Method Cross-reference

	US OSHA				HSE MDHS			
Compound	**Active Method**	**Tube Cat. No.**	**Passive Method**	**Sampler Cat. No.**	**Active Method**	**Tube Cat. No.**	**Passive Method**	**Sampler Cat. No.**
Benzene	1005	226-01	1005	575-002	104	226-01	88	575-001
Butyl acetates	1009	226-01	1009	575-002	104	226-01	88	575-001
MEK/MIBK	1004 (modified)	226-81A	1004	575-002	104	226-01	88	575-002
Styrene	89	226-73	1014	575-006	104	226-01	88	575-006
Toluene	111	226-81A or 226-01	111	575-002	104	226-01	88	575-001
Trichloroethylene/ tetrachloroethylene	1001	226-01	1001	575-002	104	226-01	88	575-001
Trimethylbenzene	1020	226-01	1020	575-002	104	226-01	88	575-001
Xylenes/ethylbenzene	1002	226-01	1002	575-002	104	226-01	88	575-001

VOC Chek 575 Series Passive Samplers

Passive Sampler for:	Sorbent	Cat. No.	Qty.
Organic vapors	Anasorb CSC Charcoal Lot 2022, 350 mg	**575-001†***	**5**
		575-001A*	**25**
Organic vapors	Anasorb 747, 500 mg	**575-002†***	**5**
		575-002A*	**25**
Ethylene oxide	Anasorb 747 treated with hydrobromic acid, 500 mg	**575-005†****	**5**
		575-005A**	**25**
Styrene	Anasorb 747 treated with tert-butyl catechol, 500 mg	**575-006***	**5**
Methanol	Anasorb 747, 500 mg, includes secondary diffusion barrier	**575-007***	**5**

† *Larger quantity packages are available. Contact SKC.* * *Storage at < 39.2 F (4 C) is **recommended**.* ** *Storage at < 39.2 F (4 C) is **required**.*

See the VOC Chek 575 Series Selection Guide on pages 85-91

V Video P PowerPoint W Webinar S Sampling Solution
Visit skcinc.com

VOC 575 Series Passive Samplers

Targeted Compounds

- Validated sampling rates
- Lightweight, miniature – convenient for workers to wear in any industry
- Easy to use and analyze

Siloxanes: D4, D5, L2, L3
- SKC validated method

VOC Chek 575 Passive Sampler
Cat. No. 575-001

See page 83 for ordering.

Ethylene Oxide (EtO)
- Hydrobromic acid-treated Anasorb 747 sorbent
- Fully validated for 15-min and 8-hr sampling

VOC Chek 575 Passive Sampler
Cat. No. 575-005

See page 83 for ordering.

Anesthetic Gases
- Halothane, isoflurane, desflurane, enflurane, sevoflurane
- Easy wear for health care workers

VOC Chek 575 Passive Sampler
Cat. No. 575-002

See page 83 for ordering.

Methanol
- Validated for 15-min and 8-hr sampling
- Ideal for the fracking industry

VOC Chek 575 Passive Sampler
Cat. No. 575-007

See page 83 for ordering.

Visit www.skcinc.com/reports for passive (diffusive) sampler validation reports.

Siloxanes Are Health and Equipment Hazards

Currently, air quality standards do not regulate siloxanes, and no state or federal promulgated methods exist for sampling and analysis. However, several non-agency methods exist to address known health and equipment issues. Siloxanes, such as octamethylcyclotetrasiloxane (D4), pose health hazards. The Globally Harmonized System (GHS) has classified D4 as suspected to cause reproductive toxicity. Recently, the European Chemical Agency (ECHA) added D4, D5, and D6 to its Candidate List of Substances of Very High Concern (SVHC). These persistent, bioaccumulative, and toxic siloxanes are contained in cleaners, polishes, waxes, cosmetics, and personal care products. In landfills, siloxanes volatilize into biogas. When biogas is combusted, siloxanes convert to sand that then becomes deposited in combustion equipment and causes failure.

VOC Chek 575 Series Selection Guide
ppm-Level Sampling of Organic Vapors

SKC VOC Chek 575 Series Passive Samplers are available with sorbents such as activated carbon and Anasorb 747 that strongly retain the collected compounds and require solvent extraction for laboratory analysis.

Use the following guide to locate target compounds and get an overview of critical sampling parameters along with the SKC catalog number of the recommended SKC VOC Chek 575 Series Passive Sampler.

Validation Levels

See the Validation Level column in this guide to determine the level of scientific testing. For online research reports, visit the online Passive Sampling Guide at www.skcinc.com/samplingguide/passive and search the compound of interest; research reports are linked in the individual guide entries.

Full – Stringent NIOSH testing protocol has been applied to verify sampler desorption efficiency, sampling rate, capacity, and the effects of relative humidity, temperature, concentration, reverse diffusion, and storage on accuracy.

Bilevel – NIOSH testing protocol has been applied to the most volatile member of a related (homologous) series of chemicals; therefore, related less volatile series members require only partial validation *(described below)* to achieve the same level of sampling accuracy. *See Guild et al. (http://doi.org/cjzqd7) or request a copy from SKC.*

Partial – NIOSH testing protocol has been applied to verify sampling rate, desorption efficiency, and storage stability.

(Not validated) Calculated – This calculation of a sampling or uptake rate uses the diffusion coefficient of a specific chemical (D) and the cross-sectional area (A) and length (L) of the sampler's diffusion path (based on sampler geometry).

OSHA – Sampler has been validated by OSHA and is referenced in a published OSHA method.

Note: If using a 575-001 or -002 sampler in place of the specific 575 sampler listed in the *SKC VOC Chek 575 Cat. No.* column for a chemical hazard, a sampling rate with **Full, Bilevel, or Partial** validation level becomes a **non-validated Calculated rate**. The non-validated sampler can be used but desorption efficiency, reverse diffusion, and storage would need to be determined.

SKC Universal Desorption Solvent

Save money with this single-solvent option. SKC Universal D-solvent (10% 1-propanol in CS_2) simplifies desorption of polar compounds as efficiently as a solvent mix, but without the expense. SKC continues to add more compounds to its Universal D-solvent list. Visit skcinc.com/samplingguides, select Passive Sampling Guides, and enter search criteria for the compound of interest.

Chemical Hazard	Validation Level	Research Report	OSHA PELs Δ TWA (ppm)	OSHA PELs Δ C/STEL (ppm)	Sampling Rate (ml/min)	Sampling Time Min (min)	Sampling Time Max (hrs)	Analytical Method	DE % Std. §	DE % Universal	SKC VOC Chek 575 Cat. No.
Acetic acid	Calculated			15 #	19.6			GC-FID	99.2		575-001
Acetic acid	Calculated			15 #	19.6			GC-FID	107.9		575-002
Acetoin (acetyl methyl carbinol)	Calculated				14.9			GC-FID			575-001 or 575-002
Acetone	Full	1303			15.2	60 ≈	8	GC-FID	90.2	105.0	575-002
Acetonitrile	Calculated			40	22.4			GC-FID	103		575-001
Acetonitrile	Calculated			40	22.4			GC-FID	108	99.4	575-002
Acetylacetone	Calculated				14.3			GC-FID			575-001 or 575-002
Acetyl methyl carbinol (acetoin)	Calculated				14.9			GC-FID			575-001 or 575-002
Acrylonitrile	Calculated			10 C	20.4	2.5 hrs	8	GC-FID			575-001
Acrylonitrile	Partial			10 C	20.4	2.5 hrs	8	GC-FID	81		575-002
Adipontrile	Calculated				11.9			GC-FID			575-001 or 575-002
Allyl alcohol	Calculated			4 #	18.4			GC-FID	64		575-001
Allyl alcohol	Calculated			4 #	18.4			GC-FID	76		575-002
Allyl chloride	Calculated			2 #	17.8			GC-FID	95.1		575-001
Allyl chloride	Calculated			2 #	17.8			GC-FID	101.3		575-002
n-Amyl acetate	Calculated				11.7			GC-FID	93.5		575-001
n-Amyl acetate	Calculated				11.7			GC-FID	96		575-002
sec-Amyl acetate (2-pentyl acetate)	Calculated				11.8			GC-FID			575-001 or 575-002
n-Amyl alcohol	Calculated				13.9			GC-FID	87.3		575-001
n-Amyl alcohol	Calculated				13.9			GC-FID	100.6		575-002
t-Amyl methyl ether (methyl tert-amyl ether)	Bilevel	1355			13.1	30	8	GC-FID	99		575-001
Aniline	Calculated				14.2			GC-FID			575-001 or 575-002
Benzene	Full	1312		5	16.0	15	8	GC-FID	94		575-001
Benzene	OSHA 1005			5	17.0	15	8	GC-FID	93.6	96	575-002
Benzophenone	Calculated				9.3			GC-FID			575-001 or 575-002
Benzotrifluoride (trifluoromethyl benzene; OXSOL 2000)	Bilevel				13.3	15	8	GC-FID	106		575-001
Benzotrifluoride (trifluoromethyl benzene; OXSOL 2000)	Bilevel				13.3	15	8	GC-FID	107		575-002
Benzyl acetate	Calculated				11.3			GC-FID	91.2		575-002
Benzyl Alcohol	Calculated				12.5			GC-FID			575-001 or 575-002
Benzyl chloride	Calculated			1 C	12.9			GC-FID	98.7		575-001
Benzyl chloride	Calculated			1 C	12.9			GC-FID	98.9		575-002
Bifenthrin	Calculated				6.2			GC-FID			575-001 or 575-002
Bromobenzene	Calculated				13.8			GC-FID			575-001 or 575-002

See page 244 for abbreviations.

VOC Chek 575 Passive Samplers

Selection Guide

Chemical Hazard	Validation Level	Research Report	OSHA PELs Δ TWA (ppm)	OSHA PELs Δ C/STEL (ppm)	Sampling Rate (ml/min)	Sampling Time Min (min)	Sampling Time Max (hrs)	Analytical Method	DE % Std. §	DE % Universal	SKC VOC Chek 575 Cat. No.
Bromodichloromethane (dichlorobromomethane)	Calculated				16.1			GC-FID			575-001 or 575-002
Bromoethane (ethyl bromide)	Calculated			250 #	18.5			GC-FID			575-001 or 575-002
Bromoform	Calculated				15.2			GC-FID			575-001 or 575-002
Bromomethane (methyl bromide)	Calculated			20 C	22.1			GC-FID			575-001 or 575-002
1-Bromopropane (propyl bromide)	Full	1740			14.4	30	8	GC-FID	100		575-001
1-Bromopropane (propyl bromide)	Full	1740			14.7	30	8	GC-FID	107		575-002
1,3-Butadiene	Calculated			5	19.6			GC-FID			575-001 or 575-002
n-Butane	Calculated				18.1			GC-FID			575-001 or 575-002
n-Butanol (n-butyl alcohol)	Calculated			50 #	15.5			GC-FID	94		575-001
n-Butanol (n-butyl alcohol)	Calculated			50 #	15.5			GC-FID	100	101.6	575-002
2-Butanol (sec-butyl alcohol)	Calculated			150 #	15.6			GC-FID	93		575-001
2-Butanol (sec-butyl alcohol)	Calculated			150 #	15.6			GC-FID	100	102.6	575-002
2-Butanone (methyl ethyl ketone, MEK)	Bilevel	1306			17.1	15	12	GC-FID	100		575-002
2-Butanone (methyl ethyl ketone, MEK)	OSHA 1004				16.88	15	8	GC-FID	92.3	96.4	575-002
2-Butoxyethanol (butyl CELLOSOLVE solvent)	Calculated				12			GC-FID			575-001
2-Butoxyethanol (butyl CELLOSOLVE solvent)	Calculated				12			GC-FID	89.7	102	575-002
2-Butoxy-2-ethanol	Calculated		50		12.05			GC-FID			575-001 or 575-002
n-Butoxy-2-propanol	Calculated				11.22			GC-FID			575-001 or 575-002
2-(Butoxyethoxy)ethyl acetate	Calculated				8.91			GC-FID			575-001 or 575-002
2-Butoxyethyl acetate	Calculated				10.43			GC-FID			575-001 or 575-002
n-Butyl acetate	OSHA 1009			200 #	13.07	15	8	GC-FID	99.2		575-002
n-Butyl acetate	Partial	1894		200 #	12.3	30	8	GC-FID	90.4		575-001
n-Butyl acetate	Partial	1894		200 #	13.2	30	8	GC-FID	98.7		575-002
sec-Butyl acetate	Calculated				12.8			GC-FID	96.2		575-001
sec-Butyl acetate	Calculated				12.8			GC-FID	96.6		575-002
sec-Butyl acetate	OSHA 1009				12.74	15	8	GC-FID	98.9		575-002
t-Butyl acetate	Calculated				12.7			GC-FID	95.1		575-001
t-Butyl acetate	Calculated				12.7			GC-FID	94.8		575-002
t-Butyl acetate	OSHA 1009				13.09	15	8	GC-FID	98.9		575-002
Butyl acrylate	Bilevel				11.7	30	8	GC-FID	95		575-002
t-Butyl alcohol	Calculated			150	15.8			GC-FID	84	103	575-002
n-Butyl alcohol (1-butanol)	Calculated			50 #	15.5			GC-FID	94		575-001
n-Butyl alcohol (1-butanol)	Calculated			50 #	15.5			GC-FID	100	101.6	575-002
sec-Butyl alcohol (2-butanol)	Calculated			150 #	15.6			GC-FID	93		575-001
sec-Butyl alcohol (2-butanol)	Calculated			150 #	15.6			GC-FID	100	102.6	575-002
t-Butyl benzene	Calculated				11.3			GC-FID		102	575-002
Butyl CELLOSOLVE acetate (ethylene glycol monobutyl ether acetate)	Calculated				10.4			GC-FID			575-001 or 575-002
Butyl CELLOSOLVE solvent (2-butoxyethanol)	Calculated				12.0			GC-FID			575-001
Butyl CELLOSOLVE solvent (2-butoxyethanol)	Calculated				12			GC-FID	89.7	102	575-002
Butyl diglycol (Diethylene glycol butyl ether)	Calculated				9.97			GC-FID			575-001 or 575-002
t-Butyl ethyl ether (ethyl tert-butyl ether)	Bilevel	1356			13.1	15	8	GC-FID	101		575-001
n-Butyl glycidyl ether	Calculated			5.6 ‡	11.6			GC-FID			575-001
t-Butyl methyl ether (methyl t-butyl ether, MTBE)	Full	1352			13.6	8.5	8	GC-FID	97.4		575-001
p-tert-Butyl toluene	Bilevel				10.4	15	8	GC-FID	100		575-001
n-Butylbenzene	Calculated				11.23			GC-FID	103		575-002
sec-Butylbenzene	Calculated				11.3			GC-FID			575-001 or 575-002
beta-Butyrol acetone	Calculated				16.6			GC-FID			575-001 or 575-002
gamma-Butyrolactone	Calculated				16.6			GC-FID	80.9		575-002
Camphene	Calculated				11.2			GC-FID			575-001 or 575-002
Camphor	Calculated				10.8			GC-FID	94.2		575-001
Camphor	Calculated				10.8			GC-FID	113		575-002
Carbolic acid (phenol)	Calculated			15.6 C	14.5			GC-FID			575-001 or 575-002
Carbon disulfide	Calculated			30	19.54			GC-FID			575-001 or 575-002
Carbon tetrachloride	Bilevel			25 C	14.1	30	8	GC-FID	98.3		575-001
Carene	Calculated				11.3			GC-FID			575-001 or 575-002
2-CELLOSOLVE acetate (2-ethoxyethyl acetate)	Calculated				12.1			GC-FID	95.4		575-002
1-Chloro-2-methyl benzene (monochlorotoluene; OXSOL 10)	Bilevel				13	15	8	GC-FID	91.8		575-001
1-Chloro-2-methyl benzene (monochlorotoluene; OXSOL 10)	Bilevel				13	15	8	GC-FID	91		575-002
1-Chloro-4-(trifluoromethyl)benzene (parachlorobenzotriuoride; OXSOL 100)	Bilevel				11.8	15	8	GC-FID	102		575-001
1-Chloro-4-(trifluoromethyl)benzene (parachlorobenzotriuoride; OXSOL 100)	Bilevel				11.8	15	8	GC-FID	108		575-002
Chlorobenzene	Partial	1838			14.41	15	8	GC-FID	87.6		575-002
Chlorobromomethane	Calculated				18.3			GC-FID	103		575-002
Chloroethane (ethyl chloride)	Calculated				20.02			GC-FID			575-001 or 575-002
Chloroform	Bilevel			50 C	13	60	8	GC-FID	97.3		575-001
Chloromethane (methylchloride)	Calculated				24.6			GC-FID			575-001 or 575-002
Chloroprene	Calculated				16.2			GC-FID			575-001 or 575-002
o-Chlorostyrene	Bilevel	1374			9.8	15	8	GC-FID	75.2		575-002
4-Chlorotoluene	Calculated				12.4			GC-FID			575-001 or 575-002
p-Cresol (4-Methyl phenol)	Calculated				13.1			GC-FID			575-001 or 575-002
m-Cresol (3-Methyl phenol)	Calculated				13.1			GC-FID			575-001 or 575-002
o-Cresol (2-Methyl phenol)	Calculated				13.2			GC-FID			575-001 or 575-002
Cumene (isopropyl benzene)	Bilevel				12.8	15	8	GC-FID	99.3		575-001
Cumene (isopropyl benzene)	Bilevel				12.8	15	8	GC-FID	106		575-002
Cyclohexane	Bilevel				15.6	15	8	GC-FID	105		575-001
Cyclohexane	Bilevel				15.6	15	8	GC-FID	109		575-002
Cyclohexanol	Calculated				13.5			GC-FID	98		575-001
Cyclohexanol	Calculated				13.5			GC-FID	105	89.6	575-002
Cyclohexanone	Partial				16.41	15	8	GC-FID	100		575-002
Cyclohexene	Calculated				15.4			GC-FID	102		575-001
Cyclohexene	Calculated				15.4			GC-FID	106		575-002
Cyclopentane	Calculated				16.8			GC-FID			575-001 or 575-002
p-Cymene (4-isopropyltoluene)	Calculated				11.3			GC-FID			575-001 or 575-002

See page 244 for abbreviations.

Chemical Hazard	Validation Level	Research Report	OSHA PELs Δ TWA (ppm)	OSHA PELs Δ C/STEL (ppm)	Sampling Rate (ml/min)	Sampling Time Min (min)	Sampling Time Max (hrs)	Analytical Method	DE % Std. §	DE % Universal	SKC VOC Chek 575 Cat. No.
Decamethylcyclopentasiloxane (D5)	Partial	1891			5.66	15	8	GC-FID	99.0		575-001
Decamethyltetrasiloxane	Calculated				7.36			GC-FID			575-001 or 575-002
n-Decane	Partial				12.2			GC-FID	103	102	575-002
1-Decanol (decyl alcohol)	Calculated				9.6			GC-FID	97.3		575-002
Decyl alcohol (1-decanol)	Calculated				9.6			GC-FID	97.3		575-002
Desflurane	Partial	1893		2	13.8	30	4	GC-FID	94.3		575-002
Diacetone alcohol	Calculated				12.4			GC-FID	92.9	97.7	575-002
1, 2-Dibromo-3-chloropropane	Calculated				12.6			GC-FID	101.3		575-002
Dibromochloromethane	Calculated				15.6			GC-FID			575-001 or 575-002
1,2-Dibromoethane (ethylene dibromide)	Calculated			30	15.3			GC-FID	92.3		575-001
1,2-Dibromoethane (ethylene dibromide)	Calculated			30	15.3			GC-FID	99.4		575-002
1, 6-Dibromohexane (hexamethylene dibromide)	Calculated				10.7			GC-FID			575-001 or 575-002
Dibutyl phthalate (DBP)	Calculated				7.5			GC-FID			575-001 or 575-002
o-Dichlorobenzene (1,2-dichlorobenzene)	Partial			50 C	12.5	15	8	GC-FID	79.2		575-001
o-Dichlorobenzene (1,2-dichlorobenzene)	Partial	1875		50	12.5	15	8	GC-FID	77.1		575-002
m-Dichlorobenzene (1,3-dichlorobenzene)	Calculated				12.95			GC-FID	91.8		575-001
m-Dichlorobenzene (1,3-dichlorobenzene)	Calculated				12.95			GC-FID	92.7		575-002
p-Dichlorobenzene (1,4-dichlorobenzene)	Calculated				12.95			GC-FID	91.1		575-001
p-Dichlorobenzene (1,4-dichlorobenzene)	Calculated				12.95			GC-FID	94.7		575-002
1,3-Dichlorobenzene (m-dichlorobenzene)	Calculated				12.95			GC-FID	91.8		575-001
1,3-Dichlorobenzene (m-dichlorobenzene)	Calculated				12.95			GC-FID	92.7		575-002
1,2-Dichlorobenzene (o-dichlorobenzene)	Partial			50 C	12.5	15	8	GC-FID	79.2		575-001
1,2-Dichlorobenzene (o-dichlorobenzene)	Partial	1875		50 C	12.5	15	8	GC-FID	77.1		575-002
1,4-Dichlorobenzene (p-dichlorobenzene)	Calculated				12.95			GC-FID	91.1		575-001
1,4-Dichlorobenzene (p-dichlorobenzene)	Calculated				12.95			GC-FID	94.7		575-002
Dichlorobromomethane (bromodichloromethane)	Calculated				16.1			GC-FID			575-001 or 575-002
Dichlorodifluoromethane (Freon 12)	Calculated				18.6			GC-FID			575-001 or 575-002
1,1-Dichloroethane	Calculated				16.85			GC-FID			575-001 or 575-002
1,2-Dichloroethane (ethylene dichloride)	Bilevel			100	14.2	60	8	GC-FID	95.8		575-001
1,2-Dichloroethene (1,2-dichloroethylene)	Full				14.8	15	8	GC-FID	97.1		575-001
1,1-Dichloroethene (vinylidene chloride)	Bilevel				12.3	60	8	GC-FID	95.2		575-001
Dichloroethyl ether	Calculated			15 C	12.5			GC-FID			575-001 or 575-002
1,2-Dichloroethylene (1,2-dichloroethene)	Full				14.8	15	8	GC-FID	97.1		575-001
Dichloromethane (methylene chloride)	Full	1323		125	14.7	60 ≈	8	GC-FID	96		575-001
1,2-Dichloropropane (propylene dichloride)	Bilevel				14.3	15	8	GC-FID	97.7		575-001
1,1-Dichloropropene	Calculated				15.6			GC-FID			575-001 or 575-002
cis-1,3-Dichloropropene	Partial	1886			13.6	15	8	GC-FID	101		575-002
trans-1,3-Dichloropropene	Partial	1886			14.4	15	8	GC-FID	99.4		575-002
1,2-Dichlorotetrafluoroethane (Freon 114)	Calculated				15.3			GC-FID			575-001 or 575-002
Dicyclopentadiene	Calculated				11.8			GC-FID			575-001 or 575-002
Diesel	Calculated				11.2			GC-FID			575-001 or 575-002
Diethyl ether (ethyl ether)	Calculated				16.4			GC-FID			575-001 or 575-002
Diethylene glycol dibutyl ether	Calculated				8.3			GC-FID			575-001 or 575-002
Diethylene glycol butyl ether	Calculated				10.0			GC-FID			575-001 or 575-002
Diethyl ketone (3-pentanone)	Calculated				14.8			GC-FID	83.9		575-001
Diethyl ketone (3-pentanone)	Calculated				14.8			GC-FID	100.3		575-002
N,N-Diethyl-m-toluamide (DEET)	Calculated				9.2						
Diethylene glycol dimethyl ether (2-methoxyethyl ether)	Calculated				11.5			GC-FID			575-001 or 575-002
Diethylene glycol monobutyl ether	Calculated				9.97			GC-FID			575-001 or 575-002
Diethylene glycol monoethyl ether	Calculated				9.85			GC-FID			575-002
Diethylene glycol monoethyl ether acetate	Calculated				9.88			GC-FID			575-001 or 575-002
Diethylene glycol monomethyl ether (2-[2-methoxyethoxy] ethanol)	Calculated				11.3			GC-FID			575-001 or 575-002
Diisobutyl ketone (DIBK), (isovalerone)	Bilevel	1305			10.3	30	8	GC-FID	98.3		575-002
1,2-Dimethoxyethane (ethylene glycol dimethyl ether)	Calculated				14.7			GC-FID			575-001 or 575-002
Diisopropylbenzene	Calculated				9.9			GC-FID			575-001 or 575-002
Dimethoxymethane (methylal)	Calculated				17.1			GC-FID			575-001 or 575-002
Dimethyl adipate	Calculated				10.73			GC-FID			575-001 or 575-002
Dimethyl cellosolve	Calculated				14.67			GC-FID			575-001 or 575-002
Dimethyl disulfide	Calculated				15.4			GC-FID			575-001 or 575-002
2,5-Dimethyl hexane	Calculated				11.82			GC-FID			575-001 or 575-002
2,2-Dimethyl hexane	Calculated				11.86			GC-FID			575-001 or 575-002
2,2-Dimethyl pentane	Calculated				12.9			GC-FID			575-001 or 575-002
2,3-Dimethyl pentane	Calculated				12.8			GC-FID			575-001 or 575-002
2,4-Dimethyl pentane	Calculated				12.9			GC-FID			575-001 or 575-002
Dimethyl pentanedioate	Calculated				10.8			GC-FID			575-001 or 575-002
Dimethyl sulfide	Calculated				19			GC-FID			575-001 or 575-002
Dimethyl sulfoxide	Calculated				16.3			GC-FID			575-001 or 575-002
N,N-Dimethylacetamide	Calculated				14.4			GC-FID			575-001 or 575-002
N,N-Dimethylaniline	Calculated				12.14			GC-FID			575-001 or 575-002
2,2-Dimethylbutane (neohexane)	Calculated				14.2			GC-FID			575-001 or 575-002
trans-1,2-Dimethylcyclohexane	Calculated				12.4			GC-FID	106.1		575-001
N,N-Dimethylformamide (DMF)	Calculated				16.4			GC-FID	87.2		575-002
2,3-Dimethylpentane	Calculated				12.8			GC-FID			575-001 or 575-002
2,4-Dinitrophenylhydrazine	Calculated				10.6			GC-FID			575-001 or 575-002
1,4-Dioxane	Calculated				15.8			GC-FID	91.4		575-002
1,3-Dioxolane	Calculated				16.9			GC-FID			575-001 or 575-002
Di-N-octyl phthalate (DNOP)	Calculated				10.8			GC-FID			575-001 or 575-002
Diphenyl oxide (phenyl ether)	Calculated				10.4			GC-FID			575-001 or 575-002
Dipropyl ketone (4-heptanone)	Calculated				12.1			GC-FID	85.3		575-001
Dipropyl ketone (4-heptanone)	Calculated				12.1			GC-FID	112		575-002
Dipropylene glycol methyl ether	Calculated				10.8			GC-FID	84.3		575-002
1,2-Di(4-pyrdyl)ethylene	Calculated				10.4			GC-FID			575-001 or 575-002

See page 244 for abbreviations.

Chemical Hazard	Validation Level	Research Report	OSHA PELs Δ TWA (ppm)	OSHA PELs Δ C/STEL (ppm)	Sampling Rate (ml/min)	Sampling Time Min (min)	Sampling Time Max (hrs)	Analytical Method	DE % Std. §	DE % Universal	SKC VOC Chek 575 Cat. No.
Dodecamethylcyclohexasiloxane	Calculated				6.75			GC-FID			575-001 or 575-002
Dodecane	Calculated				9.11			GC-FID			575-001 or 575-002
n-Dodecanol (lauryl alcohol)	Calculated				8.7			GC-FID	107.5		575-001
n-Dodecanol (lauryl alcohol)	Calculated				8.7			GC-FID	103	103.8	575-002
1-Dodecene	Calculated				9.29			GC-FID			575-001 or 575-002
1-Dodecyl alcohol (lauryl alcohol)	Calculated				8.7			GC-FID	107.5		575-001
1-Dodecyl alcohol (lauryl alcohol)	Calculated				8.7			GC-FID	103	103.8	575-002
Dodecyl methacrylate	Calculated				7.6			GC-FID			575-001 or 575-002
Enflurane (ethrane)	Partial	1893		2	13.8	30	4	GC-FID	101		575-002
Epichlorohydrin	Calculated				16.4			GC-FID	88.2		575-002
2,3-Epoxy-1-propanol (glycidol)	Calculated				17.8			GC-FID			575-001 or 575-002
2,3-Epoxypropyl methacrylate (glycidyl methacrylate)	Calculated				11.45			GC-FID			575-001 or 575-002
Ethanol (ethyl alcohol)	Partial	1876			20.3	15	8	GC-FID	99	103	575-002
2-Ethoxyethanol	Calculated				14.4			GC-FID	100.8		575-001
2-Ethoxyethanol	Calculated				14.4			GC-FID	111.2	101	575-002
2-Ethoxyethyl acetate (2-CELLOSOLVE acetate)	Calculated				12.1			GC-FID	95.4		575-002
Ethrane (enflurane)	Partial	1893		2	13.8	30	4	GC-FID	101		575-002
Ethyl acetate	Partial	1894			13.1	30	8	GC-FID	92.8		575-001
Ethyl acetate	Partial	1894			14.1	30	8	GC-FID	100	101	575-002
Ethyl acrylate	Bilevel				13.7	15	8	GC-FID	94.2		575-002
Ethyl alcohol (ethanol)	Partial	1876			20.3	15	8	GC-FID	99	103	575-002
Ethyl amyl ketone	Calculated				11.3			GC-FID			575-001 or 575-002
Ethyl benzene	Bilevel				12.9	15	6	GC-FID	100		575-001
Ethyl benzene	Bilevel				12.9	15	6	GC-FID	104		575-002
Ethyl benzene	OSHA 1002				13.83	15	8	GC-FID	99.1		575-002
Ethyl bromide (bromoethane)	Calculated			250 #	18.5			GC-FID			575-001 or 575-002
Ethyl butyl ketone (3-heptanone)	Calculated				12.2			GC-FID	87.9		575-001
Ethyl butyl ketone (3-heptanone)	Calculated				12.2			GC-FID	103.4		575-002
Ethyl chloride (chloroethane)	Calculated				20.2			GC-FID			575-001 or 575-002
Ethyl cyanide	Calculated				18.61			GC-FID			575-001 or 575-002
Ethyl ether	Calculated				16.4			GC-FID			575-001 or 575-002
Ethyl-3-ethoxypropionate	Calculated				11.2			GC-FID			575-001 or 575-002
Ethyl formate	Calculated				17.8			GC-FID			575-001 or 575-002
2-Ethyl hexyl acetate	Calculated				9.8			GC-FID	99		575-002
Bis(2-ethylhexyl) phthalate	Calculated				6.1			GC-FID			575-001 or 575-002
Ethyl lactate	Calculated				12.8			GC-FID			575-001 or 575-002
Ethyl methacrylate	Full				13.1	15	8	GC-FID	84.7		575-001
Ethyl methacrylate	Full				13.1	15	8	GC-FID	104		575-002
Ethyl propionate	Calculated				14			GC-FID			575-001 or 575-002
Ethyl tert-butyl ether (tert-butyl ethyl ether)	Bilevel	1356			13.1	15	8	GC-FID	101		575-001
Ethylene dibromide (1,2-dibromoethane)	Calculated			30	15.3			GC-FID	92.3		575-001
Ethylene dibromide (1,2-dibromoethane)	Calculated			30	15.3			GC-FID	99.4		575-002
Ethylene dichloride (1,2-dichloroethane)	Bilevel			100 C	14.2	60	8	GC-FID	95.8		575-001
Ethylene glycol	Calculated			100 mg/m³ C	17.44			GC-FID			575-001 or 575-002
Ethylene glycol diethyl ether	Calculated				12.27			GC-FID			575-001 or 575-002
Ethylene glycol dimethyl ether (1,2-dimethoxyethane)	Calculated				14.7			GC-FID			575-001 or 575-002
Ethylene glycol monobutyl ether acetate (butyl CELLOSOLVE acetate)	Calculated				10.4			GC-FID			575-001 or 575-002
Ethylene glycol monohexyl ether	Calculated				10.5			GC-FID			575-001 or 575-002
Ethylene glycol monomethyl ether acetate (methyl CELLOSOLVE acetate)	Calculated				12.9			GC-FID	92.4		575-001 or 575-002
Ethylene oxide	Full	1543		5 EL	21.2	15	8	GC-ECD	102		575-005
2-Ethylhexanol	Calculated				10.93			GC-FID	93.7	109	575-002
2-Ethyltoluene	Calculated				12.1			GC-FID	106		575-002
3-Ethyltoluene	Calculated				12.1			GC-FID			575-001
3-Ethyltoluene	Calculated				12.1			GC-FID	101		575-002
4-Ethyltoluene	Calculated				12.1			GC-FID	91		575-002
Eucalyptol	Calculated				10.5			GC-FID			575-001 or 575-002
Fluoranthene	Calculated				9.4			GC-FID			575-001 or 575-002
Freon 11 (trichlorofluoromethane)	Calculated				16.65			GC-FID			575-001 or 575-002
Freon 113 (1,1,2-trichloro-1,2,2-trifluoroethane)	Calculated			1250 #	14.1			GC-FID			575-001 or 575-002
Freon 114 (1,2-dichlorotetrafluoroethane)	Calculated				15.3			GC-FID			575-001 or 575-002
Freon 12 (dichlorodifluoromethane)	Calculated				18.6			GC-FID			575-001 or 575-002
Furfuryl	Calculated				14.5			GC-FID			575-001 or 575-002
Gasoline	Calculated				13.84			GC-FID			575-001 or 575-002
Glutaric acid dimethyl ester	Calculated				11.5			GC-FID			575-001 or 575-002
Glycidol (2,3-epoxy-1-propanol)	Calculated				17.8			GC-FID			575-001 or 575-002
Glycidyl methacrylate (2,3-epoxypropyl methacrylate)	Calculated				11.45			GC-FID			575-001 or 575-002
Halothane	Full	1893			14.1	15	8	GC-FID	99.9		575-002
n-Heptane	Bilevel				13.9	15	8	GC-FID	105		575-001
n-Heptane	Bilevel				13.9	15	8	GC-FID	108		575-002
4-Heptanone (dipropyl ketone)	Calculated				12.1			GC-FID	85.3		575-001
4-Heptanone (dipropyl ketone)	Calculated				12.1			GC-FID	112.2		575-002
3-Heptanone (ethyl butyl ketone)	Calculated				12.2			GC-FID	87.9		575-001
3-Heptanone (ethyl butyl ketone)	Calculated				12.2			GC-FID	103.4		575-002
2-Heptanone (methyl n-amyl ketone)	Calculated				12.2			GC-FID	99.8		575-002
1-Heptene	Calculated				13.1			GC-FID			575-001 or 575-002
Hexachlorobutadiene	Calculated				10.5			GC-FID			575-001 or 575-002
Hexachloroethane	Calculated				11.5			GC-FID			575-001 or 575-002
Hexadecane	Calculated				7.7			GC-FID			575-001 or 575-002
Hexamethyldisiloxane (L2)	Partial	1892			9.98	15	8	GC-FID	102.9		575-001
Hexamethylene dibromide (1,6-dibromohexane)	Calculated				10.7			GC-FID			575-001
n-Hexane	Bilevel				14.3	15	8	GC-FID	100		575-001

See page 244 for abbreviations.

Chemical Hazard	Validation Level	Research Report	OSHA PELs Δ TWA (ppm)	OSHA PELs Δ C/STEL (ppm)	Sampling Rate (ml/min)	Sampling Time Min (min)	Sampling Time Max (hrs)	Analytical Method	DE % Std. §	DE % Universal	SKC VOC Chek 575 Cat. No.
n-Hexane	Bilevel				14.3	15	8	GC-FID	112		575-002
Hexanol (hexyl alcohol)	Calculated				12.64			GC-FID	92.9	97	575-002
2-Hexanone (methyl butyl ketone MBK)	Partial	1873			14.3	15	8	GC-FID	104	97.8	575-002
2-Hexene	Calculated				14.5			GC-FID			575-001 or 575-002
Hexone (methyl isobutyl ketone [MIBK])	Calculated				13.5	30	8	GC-FID			575-001 or 575-002
Hexone (methyl isobutyl ketone [MIBK])	Bilevel	1304			13.5	30	8	GC-FID	94.6		575-002
Hexone (methyl isobutyl ketone [MIBK])	OSHA 1004				13.62	30	8	GC-FID	92.9	99.5	575-002
sec-Hexyl acetate	Calculated				11.1			GC-FID			575-001 or 575-002
Hexyl alcohol (hexanol)	Calculated				12.64			GC-FID	92.9	97	575-002
Hexylene	Calculated				14.5			GC-FID			575-001 or 575-002
Hexylene glycol	Calculated			25 C	11.81			GC-FID			575-001 or 575-002
Hydrogen cyanide	Calculated				30.40			GC-FID			575-001 or 575-002
Iodomethane (methyl iodide)	Calculated				18.7			GC-FID			575-001 or 575-002
Isoamyl acetate	Calculated				11.9			GC-FID	91.9		575-001
Isoamyl acetate	Calculated				11.9			GC-FID	108		575-002
Isoamyl alcohol	Calculated			125 #	13.9			GC-FID			575-001 or 575-002
Isobutyl acetate	Calculated				12.8			GC-FID	106		575-002
Isobutyl acetate	OSHA 1009				13.16	15	8	GC-FID	99.1		575-002
Isobutyl acrylate	Calculated				12.2			GC-FID			575-001 or 575-002
Isobutyl alcohol	Calculated				15.6			GC-FID	93.0		575-001
Isobutyl alcohol	Calculated				15.6			GC-FID	100.0	100	575-002
Isoflurane	Full	1893			13.2	15	8	GC-FID	96.0		575-002
Isooctane	Calculated				11.9			GC-FID			575-001 or 575-002
Isooctyl alcohol	Calculated				10.9			GC-FID			575-001 or 575-002
Isopentane (2-methyl butane)	Calculated			610 #	15.8			GC-FID			575-001 or 575-002
Isophorone	Partial	RDP0003			13.38	15	8	GC-FID		95	575-002
Isoprene	Calculated				18.25			GC-FID			575-001 or 575-002
Isopropanol (isopropyl alcohol)	Calculated			500 #	18.42	15	8	GC-FID			575-001
Isopropanol (isopropyl alcohol)	Partial	1839		500 #	18.42	15	8	GC-FID	103.5	102	575-002
Isopropyl acetate	Calculated				14.2			GC-FID	88.5		575-001
Isopropyl acetate	Calculated				14.2			GC-FID	101		575-002
Isopropyl alcohol (isopropanol)	Partial	1839		500 #	18.42	15	8	GC-FID	103.5	102	575-002
Isopropyl benzene (cumene)	Bilevel				12.8	15	8	GC-FID	99.3		575-001
Isopropyl benzene (cumene)	Bilevel				12.8	15	8	GC-FID	106		575-002
Isopropyl ether	Calculated				13.4			GC-FID			575-001 or 575-002
Isopropyl glycidyl ether	Calculated			50 #	12.8			GC-FID			575-001 or 575-002
4-Isopropyltoluene (p-cymene)	Calculated				11.3			GC-FID			575-001 or 575-002
Isovalerone (diisobutyl ketone [DIBK])	Bilevel	1305			10.3	30	8	GC-FID	98.3		575-002
Jet fuel	Calculated				11.3			GC-FID			575-001 or 575-002
Kerosene	Calculated				11.03			GC-FID			575-001 or 575-002
Lauryl alcohol (1-dodecanol)	Calculated				8.7			GC-FID	107.5		575-001
Lauryl alcohol (1-dodecanol)	Calculated				8.7			GC-FID	103	103.8	575-002
Limonene	Calculated				11.1			GC-FID	102		575-002
Mesityl oxide	Calculated				13.7			GC-FID			575-001 or 575-002
Mesitylene (1,3,5-trimethylbenzene)	Calculated				12.1			GC-FID	93.6		575-001
Mesitylene (1,3,5-Trimethylbenzene)	Calculated				12.1			GC-FID	96		575-002
Mesitylene (1,3,5-trimethylbenzene)	OSHA 1020				12.1	15	8	GC-FID	101		575-002
Methacrolein	Calculated				17.4			GC-FID			575-001 or 575-002
Methanol (methyl alcohol)	Partial	1895		250	1.2	15	8	GC-FID	101	93.8	575-007
2-Methoxy-1-propyl acetate	Calculated				12.1			GC-FID			575-001 or 575-002
1-Methoxy-2-propanol (propylene glycol monomethyl ether)	Calculated			150 #	14.7			GC-FID	82.9		575-001
1-Methoxy-2-propanol (propylene glycol monomethyl ether)	Calculated			150 #	14.7			GC-FID	100	106	575-002
1-Methoxy-2-propyl acetate (propylene glycol monomethyl ether acetate)	Calculated				12.2			GC-FID	108		575-001
1-Methoxy-2-propyl acetate (propylene glycol monomethyl ether acetate)	Calculated				12.1			GC-FID	103	105	575-002
2-Methoxyethanol (methyl CELLOSOLVE)	Calculated				16.1			GC-FID	94.7		575-001
2-Methoxyethanol (methyl CELLOSOLVE)	Calculated				16.1			GC-FID	91.1	81.8	575-002
2-(2-Methoxyethoxy) ethanol (diethylene glycol monomethyl ether)	Calculated				11.3			GC-FID			575-001 or 575-002
2-Methoxyethyl ether (diethylene glycol dimethyl ether)	Calculated				11.5			GC-FID			575-001 or 575-002
Methoxyflurane	Calculated			2	13.3			GC-FID	95.7		575-002
Methyl acetate	Calculated			250 #	17.8			GC-FID			575-001 or 575-002
Methyl acrylate	Full				15.7	15	8	GC-FID	94.3		575-002
Methyl alcohol (methanol)	Partial	1895		250	1.2	15	8	GC-FID	101	93.8	575-007
Methyl amyl alcohol (methyl isobutyl carbinol)	Calculated				12.8			GC-FID			575-002
Methyl bromide (bromomethane)	Calculated			20C	22.1			GC-FID			575-001 or 575-002
2-Methyl butane (isopentane)	Calculated			610 #	15.8			GC-FID			575-001
2-Methyl butyl acetate	Calculated				11.8			GC-FID			575-001 or 575-002
Methyl butyl ketone (MBK), (2-hexanone)	Calculated				14.3	15	8	GC-FID			575-001
Methyl butyl ketone (MBK), (2-hexanone)	Partial	1873			14.3	15	8	GC-FID	104	97.8	575-002
Methyl carbitol	Calculated				12.1			GC-FID			575-001 or 575-002
Methyl CELLOSOLVE (2-methoxyethanol)	Calculated				16.1			GC-FID	94.7		575-001
Methyl CELLOSOLVE (2-methoxyethanol)	Calculated				16.1			GC-FID	91.1	81.8	575-002
Methyl CELLOSOLVE acetate (ethylene glycol monomethyl ether acetate)	Calculated				12.9			GC-FID	92.4		575-002
Methyl chloroform (1,1,1-trichloroethane)	Bilevel				14.1	15	8	GC-FID	99.9		575-001
Methyl cyclohexane	Bilevel				14.2	15	8	GC-FID	106		575-001
Methyl ethyl ketone (MEK), (2-butanone)	Bilevel	1306			17.1	15	12	GC-FID	100		575-002
Methyl ethyl ketone (MEK), (2-butanone)	OSHA 1004				16.88	15	8	GC-FID	92.3	96.4	575-002
Methyl formate	Calculated				20.58			GC-FID			575-001 or 575-002
2-Methyl hexane	Calculated				12.80			GC-FID			575-001 or 575-002
3-Methyl hexane	Calculated				12.80			GC-FID			575-001 or 575-002
Methyl iodide (iodomethane)	Calculated				18.7			GC-FID			575-001 or 575-002
Methyl isoamyl ketone	Calculated				12.3			GC-FID			575-001 or 575-002
Methyl isobutyl carbinol (methyl amyl alcohol)	Calculated				12.8			GC-FID			575-001 or 575-002

See page 244 for abbreviations.

VOC Chek 575 Passive Samplers

Selection Guide

Chemical Hazard	Validation Level	Research Report	OSHA PELs Δ TWA (ppm)	OSHA PELs Δ C/STEL (ppm)	Sampling Rate (ml/min)	Sampling Time Min (min)	Sampling Time Max (hrs)	Analytical Method	DE % Std. §	DE % Universal	SKC VOC Chek 575 Cat. No.
Methyl isobutyl ketone (MIBK), (hexone)	Bilevel	1304			13.5	30	8	GC-FID	94.6		575-002
Methyl isobutyl ketone (MIBK), (hexone)	OSHA 1004				13.62	30	8	GC-FID	92.9	99.5	575-002
Methyl isopropyl ketone	Calculated				14.8			GC-FID			575-001 or 575-002
Methyl isothiocyanate	Calculated				17.36			GC-FID			575-001 or 575-002
Methyl methacrylate (MMA)	Bilevel	1308			13.1	7.5	8	GC-FID	100.5		575-002
Methyl n-amyl ketone (2-heptanone)	Calculated				12.2			GC-FID	99.8		575-002
2-Methyl pentane	Calculated				14.1			GC-FID			575-001 or 575-002
3-Methyl pentane	Calculated				14.1			GC-FID			575-001 or 575-002
Methyl propyl ketone (2-pentanone)	Calculated				14.8			GC-FID	92.6		575-002
3-Methyl pyrrolidinone	Calculated				13.28			GC-FID			575-001 or 575-002
Methyl styrene (vinyl toluene)	Calculated				12.3			GC-FID			575-001 or 575-002
Methyl t-butyl ether (MTBE)	Full	1352			13.6	8.5	8	GC-FID	97.4		575-001
Methyl tert-amyl ether (tert-amyl methyl ether)	Bilevel	1355			13.1	30	8	GC-FID	99		575-001
2-Methyl tertahydrofuran	Calculated				14.7			GC-FID			575-001 or 575-002
n-Methyl-2-pyrrolidinone	Calculated				13.97			GC-FID			575-001 or 575-002
5-Methyl-3-heptanone	Calculated				11.4			GC-FID	87.5		575-001
5-Methyl-3-heptanone	Calculated				11.4			GC-FID	110.7		575-002
Methylal (dimethoxymethane)	Calculated				17.1			GC-FID			575-001 or 575-002
Methylchloride (chloromethane)	Calculated				24.6			GC-FID			575-001 or 575-002
1-Methylcyclohexanol	Full				12.4	15	8	GC-FID	94.7		575-001
1-Methylcyclohexanol	Full				12.4	15	8	GC-FID	108		575-002
Methylcyclopentane	Calculated				14.9			GC-FID			575-001 or 575-002
Methylene chloride (dichloromethane)	Full	1323		125	14.7	60 ≈	8	GC-FID	96		575-001
3-Methylhexane	Calculated				12.8			GC-FID			575-001 or 575-002
alpha-Methylstyrene	Bilevel	1359		100 C	12.6	15	12	GC-FID	95.7		575-002
Mineral spirits	Calculated				10.95			GC-FID			575-001
Monochlorotoluene (1-chloro-2-methylbenzene; OXSOL 10)	Bilevel				13.0	15	8	GC-FID	91.8		575-001
Monochlorotoluene (1-chloro-2-methylbenzene; OXSOL 10)	Bilevel				13.0	15	8	GC-FID	91		575-002
Naphtha (solvent naphtha (petroleum) light aromatic)	Calculated				11.6			GC-FID			575-001 or 575-002
Naphthalene	Calculated				12.2			GC-FID			575-001 or 575-002
1-Naphthyl isothiocyanate	Calculated				11.3			GC-FID			575-001 or 575-002
Neohexane (2,2-dimethylbutane)	Calculated				14.2			GC-FID			575-001
Nitrobenzene	Calculated				12.6			GC-FID			575-001
Nonafluorobutyl methyl ether	Calculated				8.9			GC-FID			575-001 or 575-002
Nonane	Bilevel				10.6	15	8	GC-FID	103		575-001
Nonyl alcohol	Calculated				10.2			GC-FID	96.80		575-002
Octadecane	Calculated				7.1			GC-FID			575-001
Octamethylcyclotetrasiloxane (D4)	Partial	1890			6.32	15	8	GC-FID	97.2		575-001
Octamethyltrisiloxane (L3)	Partial	1902			8.47	15	8	GC-FID	98.3		575-001
n-Octane	Bilevel				12.7	15	8	GC-FID	106		575-001
n-Octane	Bilevel				12.7	15	8	GC-FID	110		575-002
Octanol (octyl alcohol)	Calculated				10.86			GC-FID			575-002
3-Octanone (ethyl amyl ketone)	Calculated				11.34			GC-FID			575-001 or 575-002
1-Octene	Calculated				11.99			GC-FID			575-001
Octyl alcohol (octanol)	Calculated				10.86			GC-FID			575-002
OXSOL 10 (monochlorotoluene [1-chloro-2-methyl benzene])	Bilevel				13	15	8	GC-FID	91.8		575-001
OXSOL 10 (monochlorotoluene [1-chloro-2-methyl benzene])	Bilevel				13	15	8	GC-FID	91		575-002
Oxybenzone	Calculated				15			GC-FID			575-001 or 575-002
Parachlorobenzotrifluoride (1-chloro-4-[trifluoromethyl] benzene; OXSOL 100)	Bilevel				11.8	15	8	GC-FID	102		575-001
Parachlorobenzotrifluoride (1-chloro-4-[trifluoromethyl] benzene; OXSOL 100)	Bilevel				11.8	15	8	GC-FID	108		575-002
Pentachloroethane	Calculated				12.4			GC-FID			575-001 or 575-002
Pentadecane	Calculated				7.93			GC-FID			575-001
n-Pentane	Full	1311			14.9	15	8	GC-FID	105.2		575-001
2,4-Pentanedione (acetylacetone)	Calculated				14.3						
3-Pentanone (diethyl ketone)	Calculated				14.8			GC-FID	83.9		575-001
3-Pentanone (diethyl ketone)	Calculated				14.8			GC-FID	100.3		575-002
2-Pentanone (methyl propyl ketone)	Calculated				14.8			GC-FID	92.6		575-002
1-Pentene	Calculated				16.3			GC-FID			575-001
2-Pentyl acetate (sec-amyl acetate)	Calculated				11.8			GC-FID			575-001
Perchloroethylene (tetrachloroethylene)	Full	1686		200 C	13.1	7.5	12	GC-FID	100.8		575-001
Perchloroethylene (tetrachloroethylene)	OSHA 1001			200 C	13.06	15	8	GC-FID	95.4		575-002
Perfluoromethylcyclohexane	Partial				10.2			GC-FID	102		575-002
Phenol (carbolic acid)	Calculated			15.6 C	14.5			GC-FID			575-001 or 575-002
Phenyl ether (diphenyl oxide)	Calculated				10.4			GC-FID			575-001
Phenyl glycidyl ether	Calculated				11.6			GC-FID			575-001
4-Phenylcyclohexene	Calculated				11.53			GC-FID			575-001 or 575-002
Phenyl propane	Calculated				12.14			GC-FID			575-001 or 575-002
alpha-Pinene	Partial	1840			11.3	15	8	GC-FID	108.6		575-002
Propane	Calculated				21.73			GC-FID			575-001
n-Propanol (propyl alcohol)	Calculated				17.7			GC-FID	87.3		575-001
n-Propanol (propyl alcohol)	Calculated				17.7			GC-FID	97.8		575-002
Propargly alcohol	Calculated				19.0			GC-FID			575-001 or 575-002
Propionic acid	Calculated				16.8			GC-FID			575-001 or 575-002
Propionitrile	Calculated				18.61			GC-FID			575-001
Propoxy-2-propanol	Calculated				12.2			GC-FID			575-001 or 575-002
n-Propyl acetate	Calculated				14.1			GC-FID	87.5		575-001
n-Propyl acetate	Calculated				14.1			GC-FID	101.1		575-002
Propyl alcohol (n-propanol)	Calculated				17.7			GC-FID	87.3		575-001
Propyl alcohol (n-propanol)	Calculated				17.7			GC-FID	97.8		575-002
Propyl bromide (1-bromopropane)	Full	1740			14.4	30	8	GC-FID	100		575-001
Propyl bromide (1-bromopropane)	Full	1740			14.7	30	8	GC-FID	107		575-002
n-Propylbenzene	Calculated				12.1			GC-FID	101		575-002

See page 244 for abbreviations.

Chemical Hazard	Validation Level	Research Report	OSHA PELs Δ TWA (ppm)	OSHA PELs Δ C/STEL (ppm)	Sampling Rate (ml/min)	Sampling Time Min (min)	Sampling Time Max (hrs)	Analytical Method	DE % Std. §	DE % Universal	SKC VOC Chek 575 Cat. No.
Propylene dichloride (1,2-dichloropropane)	Bilevel				14.3	15	8	GC-FID	97.7		575-001
Propylene glycol monomethyl ether (1-methoxy-2-propanol)	Calculated			150 #	14.7			GC-FID	82.9		575-001
Propylene glycol monomethyl ether (1-methoxy-2-propanol)	Calculated			150 #	14.7			GC-FID	100	106	575-002
Propylene glycol monomethyl ether acetate (1-methoxy-2-propyl acetate)	Calculated				12.2			GC-FID	108		575-001
Propylene glycol monomethyl ether acetate (1-methoxy-2-propyl acetate)	Calculated				12.1			GC-FID	103	105	575-002
Propylene oxide	Calculated				19.9			GC-FID	98		575-001
Propylene oxide	Calculated				19.9			GC-FID	99.7		575-002
Pyridine	Calculated				16.6			GC-FID	88.2	93.8	575-002
Sevoflurane	Partial	1893		2	12.8	30	4	GC-FID	100		575-002
Siloxane D4 (octamethylcyclotetrasiloxane-D4)	Partial	1890			6.32	15	8	GC-FID	97.2		575-001
Siloxane D5 (decamethylcyclopentasiloxane-D5)	Partial	1891			5.66	15	8	GC-FID	99.0		575-001
Siloxane L2 (hexamethyldisiloxane-L2)	Partial	1892			9.98	15	8	GC-FID	102.9		575-001
Siloxane L3 (octamethyltrisiloxane-L3)	Partial	1902			8.47	15	8	GC-FID	98.3		575-001
Solvent naphtha (petroleum) light aromatic	Calculated				11.61			GC-FID			575-001 or 575-002
Styrene	Full	1313		200 C	13.70	15	8	GC-FID	≥ 75		575-002
Styrene	OSHA 1014			200 C	13.55	15	8	GC-FID	96.7		575-006
Terpineol	Calculated				10.27			GC-FID			575-001 or 575-002
1,1,1,2-Tetrachloroethane	Calculated				13.63			GC-FID	98.3		575-002
1,1,2,2-Tetrachloroethane	Bilevel				11.8	480∞	8	GC-FID	64.4*		575-001
Tetrachloroethylene (perchloroethylene)	Full	1686		200 C	13.1	7.5	12	GC-FID	100.8		575-001
Tetrachloroethylene (perchloroethylene)	OSHA 1001			200 C	13.06	15	8	GC-FID	95.4		575-002
Tetradecane	Calculated				8.3			GC-FID			575-001
Tetrahydrofuran	Partial	1841			17.7	15	8	GC-FID	100.6		575-002
1,2,3,4-Tetramethylbenzene	Calculated				11.1			GC-FID			575-001 or 575-002
1,2,3,5-Tetramethylbenzene	Calculated				10.8			GC-FID			575-001 or 575-002
1,2,4,5-Tetramethylbenzene	Calculated				11.2			GC-FID	86.6		575-002
Toluene	Bilevel			300 C	14.5	15	8	GC-FID	97.9		575-001
Toluene	Calculated			300 C	14.5	15	8	GC-FID		93.1	575-002
Toluene	OSHA 111			300 C	14.89	10	8	GC-FID	97		575-002
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	Calculated			1250 #	14.1			GC-FID			575-001 or 575-002
1,2,3-Trichlorobenzene	Calculated				11.34			GC-FID			575-001 or 575-002
1,2,4-Trichlorobenzene	Calculated			5 C	11.4			GC-FID			575-001 or 575-002
1,1,2-Trichloroethane	Bilevel				12.5	15	8	GC-FID	96.7		575-001
1,1,1-Trichloroethane (methyl chloroform)	Bilevel				14.1	15	8	GC-FID	99.9		575-001
Trichloroethylene	Full			200 C	14.9	15	8	GC-FID	102		575-001
Trichloroethylene	OSHA 1001			200 C	14.24	15	8	GC-FID	97.5		575-002
Trichlorofluoromethane (Freon 11)	Calculated				16.65			GC-FID			575-001 or 575-002
1,2,3-Trichloropropane	Bilevel				11.9	15	8	GC-FID	98.1		575-001
alpha, alpha, alpha-Trifluorotoluene	Calculated				13.4			GC-FID			575-001 or 575-002
Tridecane	Calculated				9.2			GC-FID			575-001 or 575-002
Trifluoromethyl benzene (benzotrifluoride; OXSOL 2000)	Bilevel				13.3	15	8	GC-FID	106		575-001
Trifluoromethyl benzene (benzotrifluoride; OXSOL 2000)	Bilevel				13.3	15	8	GC-FID	107		575-002
1,2,3-Trimethylbenzene	Calculated				12.0			GC-FID	91.1		575-001
1,2,3-Trimethylbenzene	Calculated				12.0	15	8	GC-FID	93.8		575-002
1,2,3-Trimethylbenzene	OSHA 1020				11.6	15	4	GC-FID	98.3		575-002
1,2,4-Trimethylbenzene	OSHA 1020				11.7	15	4	GC-FID	93.8		575-002
1,2,4-Trimethylbenzene	Partial				13.05			GC-FID	88.4		575-001
1,2,4-Trimethylbenzene	Partial	1837			13.05	15	8	GC-FID	88.9		575-002
1,3,5-Trimethylbenzene (mesitylene)	Calculated				12.1			GC-FID	93.6		575-001
1,3,5-Trimethylbenzene (mesitylene)	Calculated				12.1			GC-FID	96		575-002
1,3,5-Trimethylbenzene (mesitylene)	OSHA 1020				12.1	15	4	GC-FID	101		575-002
2,2,4-Trimethylpentane	Calculated				11.89			GC-FID			575-001 or 575-002
n-Undecane	Calculated				9.62			GC-FID			575-001 or 575-002
1-Undecanol	Calculated				9.59			GC-FID			575-001 or 575-002
Vinyl acetate	Full	1860		4 C #	16.4	30	8	GC-FID	92		575-002
Vinyl bromide	Calculated				19.6			GC-FID			575-001 or 575-002
Vinyl chloride	Calculated				21.4			GC-FID			575-001 or 575-002
Vinyl toluene (methyl styrene)	Calculated				12.3			GC-FID			575-001 or 575-002
n-Vinyl-2-pyrrolidone	Calculated				13.9			GC-FID			575-001 or 575-002
4-Vinylcyclohexene	Calculated				12.4			GC-FID			575-001 or 575-002
Vinylidene chloride (1,1-dichloroethene)	Bilevel				12.3	60	8	GC-FID	95.2		575-001
m-Xylene	Bilevel			150 #	12.5	15	8	GC-FID	96.6		575-001
m-Xylene	Bilevel			150 #	12.5	15	8	GC-FID	101		575-002
m-Xylene	OSHA 1002			150 #	13.82	15	8	GC-FID	96.1		575-002
o-Xylene	Bilevel			150 #	11.9	15	8	GC-FID	91		575-001
o-Xylene	OSHA 1002			150 #	14.24	15	8	GC-FID	89.4		575-002
p-Xylene	Bilevel			150 #	12.8	15	8	GC-FID	95.6		575-001
p-Xylene	Bilevel			150 #	12.8	15	8	GC-FID	103		575-002
p-Xylene	OSHA 1002			150 #	13.94	15	8	GC-FID	95.3		575-002
Xylenes, Total	Partial				12.64	15	8	GC-FID			575-001 or 575-002

* Lower than the NIOSH-accepted guideline
\# NIOSH Short Term Exposure Limit (STEL)
∞ Depends on detector sensitivity
† In-house exposure level
‡ NIOSH Recommended Exposure Limit (REL)
◊ Occidental Chemical corporate exposure limits
Δ Agency standards for OSHA listings represent the OSHA PELs reported in 29 CFR 1910.1000 Part 1910, Section 1000.
≈ STEL sampling, 7.5 to 30 min, see Research Report at skcinc.com/reports.
§ The values given for the desorption efficiency were obtained in SKC Inc. Laboratories. See the online guide at skcinc.com/samplingguide/passive for details on the desorption solvent used.
¶ OSHA construction industry standards
▼ OARS-WEEL TWA Level (Occupational Alliance for Risk Science - Workplace Environmental Exposure Levels)
EL Excursion Limit
LFC Lowest feasible concentration Part 1910, Section 1000.
Ω Search for and consult Research Report 1303 at skcinc.com/reports for further information on choosing a sampling rate.

More information at skcinc.com/samplingguide/passive

See page 244 for abbreviations.

UME^X100 Passive Sampler for Formaldehyde

Industrial Hygiene, Environmental, and Indoor Air Sampling

- Meets OSHA Method 1007 specifications
- Conforms to EU ISO 16000-4-2011
- Accuracy meets OSHA requirements
- Uses 2,4-DNPH chemistry
- Documented formaldehyde/other aldehyde uptake rates for 15-minute to 24-hour and 7-day samples (*see left*)
- Permits detection of low ppb levels of formaldehyde

Sampling Rates for Other Aldehydes

Compound	Sampling Rate (ml/min)
Formaldehyde *(full validation)*	**28.6** (velocity 5 to 100 cm/sec, 15 min to 24 hrs) **20.4** (velocity < 5 cm/sec, 1 to 7 days)
Acetaldehyde	22.8‡
Benzaldehyde	13.5‡
Butyraldehyde	15.8‡
Crotonaldehyde	9.71‡
Glutaraldehyde	14‡
Hexanaldehyde	9.66‡
Isovaleraldehyde	15.5‡
Propionaldehyde	14‡
Chloroacetaldehyde	19.4**
Decylaldehyde	10.4**
Heptanaldehyde	12.8**
Nonanaldehyde	11.6**
o-Phthalaldehyde	12.83**
o-Tolualdehyde	12.7**
Valeraldehyde	15.4**

‡ *Partial Validation*
** *Calculated sampling rate; visit www.skcinc.com/samplingguide/passive*

Need a passive sampler for aliphatic amines?

SKC offers the UME^X 400! Learn more at www.skcinc.com/umex-amines.

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VERSATILE UME^X100 SAMPLER

Industrial Hygiene Sampling
OSHA PEL 0.75 ppm (TWA)
2 ppm (STEL)
DFG MAK 0.3 ppm (TWA)
1 ppm (Ceiling)

Indoor Air Sampling
2 ppb (24 hours)
0.2 ppb (7 days)

PROFESSIONALS' #1 CHOICE

Description	Cat. No.	Qty.
UME^X100 Passive Sampler for Formaldehyde/Other Aldehydes*†Δ	500-100	10
Suitable for sampling other aldehydes; see table above left	500-100A	25
Treated Tape for QC - UME^X 100*†	P20084	50

Accessory	Cat. No.	Qty.
Stand for Area Sampling *(shown above)*	690-302	ea

* *Limited shelf-life, single use only; do not reuse*
† *Store at ≤ 39.2 F (4 C)*
Δ *If sampling in an atmosphere containing formalin, contact SKC.*

UME^{X}200 Passive Sampler for NO_2 and SO_2

Industrial Hygiene and Environmental Sampling

- Same chemistry as active OSHA Method ID-182
- Validated sampling of sulfur dioxide and/or nitrogen dioxide from 15 minutes to 24 hours
- 3-week sample storage at ambient temperature
- Documented sampling rate of 17.3 ml/min for NO_2 and 15.2 ml/min for SO_2

VERSATILE
UME^{X}200

Industrial Hygiene Sampling
NO_2: *ACGIH TLV 0.2 ppm (TWA)*
NO_2: *OSHA Ceiling Limit 5 ppm*
NO_2: *DFG MAK 0.5 ppm (TWA)*
SO_2: *OSHA PEL 5 ppm (TWA)*
SO_2: *NIOSH REL 2 ppm (TWA)*
SO_2: *DFG MAK 1 ppm (TWA)*

Environmental Sampling
NO_2: *As low as 2 ppb (24 hours)*
SO_2: *As low as 17.4 ppb (24 hours) and EPA NAAQS Standard 100 ppb (1 hour)*

Description	Cat. No.	Qty.
UME^{X}200 Passive Sampler for Nitrogen Dioxide and/or Sulfur Dioxide*	500-200	10
	500-200A	25
Treated Tape for QC - UME^X 200*	P20098	25

Accessory	Cat. No.	Qty.
Shelter for Outdoor Sampling	690-303	ea

* *Limited shelf-life, single use only; do not reuse*

Best Practice
Store and prepare sampling media in a solvent-free environment.

UME^{X}300 Passive Sampler for Ammonia

Industrial Hygiene and Environmental Sampling

- Chemistry similar to active OSHA Method ID-188 and NIOSH 6016
  - Analysis by ion chromatography with conductivity detector or visible absorption spectrometry
- Safe – no glass or sulfuric acid liquid in the sampler
- Enhanced sensitivity with documented 39.92 ml/min uptake rate
- Validated sampling of ammonia from 15 minutes to 24 hours

VERSATILE
UME^{X}300

Industrial Hygiene Sampling
ACGIH TLV 25 ppm (TWA)
ACGIH TLV 35 ppm (STEL)
OSHA PEL 50 ppm (TWA)
DFG MAK 20 ppm (TWA)

Environmental Sampling
As low as 25 ppb (24 hours)

Description	Cat. No.	Qty.
UME^{X}300 Passive Sampler for Ammonia*†	500-300	10
Treated Tape for QC - UME^X 300*†	P20083	25

Accessory	Cat. No.	Qty.
Stand for Area Sampling	690-302	ea

* *Limited shelf-life, single use only; do not reuse*
† *Store at ≤ 39.2 F (4 C)*

Elemental Mercury Passive Sampler

Industrial Hygiene and Extended Environmental Sampling

- **Lowest cost per measurement available**
  - Reusable capsule holder
  - Replaceable sorbent capsule
- **Lightweight and easy to use; no pump needed**
- **No moisture or chlorine interferences**
- **Long-term sampling up to 120 hours**
- **Validated by OSHA Method ID-140**
  - Documented extended sampling to 120 hours *(contact OSHA for backup report)*
- **High accuracy, sensitivity, and capacity**
  - Positive analysis of mercury
  - Removable sorbent capsule eliminates false high readings

• TECH TIPS •

▶ The 520 Elemental Mercury Passive Sampler only samples elemental mercury (Hg) in the vapor phase; it does not sample elemental Hg in the particulate phase or organic mercury compounds.

The SKC Passive Sampler for Elemental Mercury is specified in OSHA ID-140 for eight-hour TWA sampling. A backup report by OSHA expands application of this sampler for long-term sampling up to 120 hours. Following analysis by atomic absorption, the housing can be cleaned and reused.

Description	Cat. No.	Qty.
Sorbent Capsules contain Anasorb C300* and include replacement foams and resealable bags	520-02A	10
	520-02C	30
Reusable Capsule Holder	520-03	ea
	520-03A	5

** Anasorb C300 is equivalent to Carulite and Hydrar.*
Note: *To sample low levels of mercury, use a sorbent tube.*

Hydrogen Cyanide (HCN) Passive Sampler

APPLICATIONS

HCN Passive Sampler

- *Fumigation*
- *Agriculture*
- *Electroplating*
- *Mining*
- *Chemical synthesis*
- *Synthetic fiber, plastic, dye, and pesticide production*
- *Steel and iron hardening*

- **Specified in OSHA Method 1015**
- **Same soda lime sorbent as in NIOSH 6010 and 6017**
- **Operates at a sampling rate of 28.4 ml/min**
- **Collects HCN from 0.44 to 20 ppm**
- **Suitable for 15-minute to 8-hour samples**

The lightweight, miniature HCN Passive Sampler provides accurate HCN exposure results. Its unique design allows easy field loading of sorbent into the housing before sampling and transfer of sorbent to a vial after sampling. Samples are extracted with water and analyzed by ion chromatography/ electrochemical detector (IC/ELCHM).

Description	Cat. No.	Qty.
HCN Passive Sampler	590-400	5

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Passive Color Tubes
Easy, Economical Screening Tools

- **On-the-spot results**
- **Easy to use**
  - No interpretations, long calculations, or charts
  - No pump needed
- **TWA measurements**
- **Convenient, lightweight tube holder**
  - Securely clips to a worker's collar for unobtrusive measurements in the breathing zone
- **Low-cost screening device**

Gastec Color Dosimeter Tubes

Chemical Hazard	Measuring Range (ppm-hours)	Cat. No.	Qty.
Acetaldehyde	0.1 - 20	810-91D †*Δ	10
Acetaldehyde	1.2 - 360	810-152D †*	10
Acetaldehyde	4 - 1200	810-151D †*	10
Acetic acid	0.5 - 100	810-81D	10
Acetic anhydride	0.45 - 90	810-81D †	10
Acetone	5 - 1500	810-151D *	10
Acetone	1.4 - 420	810-152D †*	10
Ammonia	0.1 - 10	810-3DL	10
Ammonia	2.5 - 1000	810-3D	10
Benzene	2.4 - 600	810-122DL †	10
1,3-Butadiene	1.3 - 200	810-174D	10
Carbon dioxide	0.02 - 12%-hr	810-2D	10
Carbon monoxide	1.04 - 2000	810-1D	10
Carbon monoxide	0.4 - 400	810-1DL *	10
Chlorine	0.08 - 100	810-8D	10
Chlorine	2.4 - 240	810-132D †*Δ	10
Cumene	3.4 - 850	810-122DL †	10
1,2 Dichloroethylene	3.9 - 600	810-174D †	10
1,2 Dichloroethylene	6 - 600	810-132D †*Δ	10
Dimethyl amine	1.9 - 750	810-3D †	10
Dimethyl amine	0.29 - 29	810-3DL †	10
N,N-Dimethylethyl amine	4 - 1600	810-3D †	10
Ethyl alcohol	100 - 25,000	810-112D	10
Ethyl benzene	2.8 - 700	810-122DL †	10
Ethylene	1.56 - 240	810-174D †	10
Formaldehyde	0.1 - 20	810-91D *Δ	10
Formic acid	0.55 - 110	810-81D †	10
Furfural	0.2 - 40	810-91D †*Δ	10
Hydrazine	0.05 - 650	810-3D †	10
Hydrogen chloride	1 - 100	810-14D	10

Chemical Hazard	Measuring Range (ppm-hours)	Cat. No.	Qty.
Hydrogen chloride	1.8 - 180	810-132D †*Δ	10
Hydrogen cyanide	1 - 200	810-12D	10
Hydrogen fluoride	1 - 100	810-17D	10
Hydrogen peroxide	0.5 - 40	810-32D	10
Hydrogen sulfide	0.2 - 200	810-4D	10
Isoprene	2.6 - 400	810-174D †	10
Methyl amine	0.19 - 19	810-3DL †	10
Methyl ethyl ketone	6.5 - 1950	810-151D †*	10
Methyl ethyl ketone	2 - 600	810-152D *	10
Methyl ethyl ketone	0.125 - 25	810-91D †*Δ	10
Methyl isobutyl ketone	4 - 1200	810-152D †*	10
Methyl isobutyl ketone	11.5 - 3450	810-151D †*	10
Nitric acid	0.32 - 32	810-17D †	10
Nitric acid	0.8 - 80	810-14D †	10
Nitrogen dioxide	0.01 - 3	810-9DL *Δ	10
Nitrogen dioxide	0.1 - 30	810-9D *Δ	10
Perchloroethylene	3 - 150	810-133D	10
Styrene	26 - 6500	810-122DL	10
Sulfur dioxide	0.2 - 100	810-5D	10
Sulfur dioxide	10 - 600	810-5DH	10
Tetrachloroethylene	1.5 - 150	810-132D *Δ	10
Tetrachloroethylene	3 - 150	810-133D *Δ	10
Toluene	2 - 500	810-122DL	10
Trichloroethylene	3 - 300	810-132D *Δ	10
Triethylamine	5.3 - 2100	810-3D †	10
Trimethylamine	0.23 - 23	810-3DL †	10
Vinyl chloride	1.56 - 240	810-174D †	10
Xylene	3.4 - 850	810-122DL †	10
Dosi Tube Holders		810-710	3

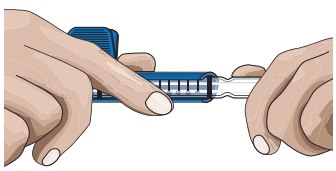
† *Secondary application; requires correction factor*
* *Store tubes at 40 to 50 F (5 to 10 C).*

Δ *One-year shelf-life*

Using Passive Color Tubes

Color dosimeter tubes offer quick on-the-spot determination of exposure to chemical hazards without the need for a pump or training. Time-weighted average (TWA) measurements up to eight hours are as simple as:

1. Inserting tube in holder
2. Breaking tube tips
3. Reading results on tube in ppm-hours
4. Dividing reading by number of hours sampled



• TECH TIPS •

- When using passive color dosimeter (or "dosi") tubes, the time-weighted average (TWA) can be calculated at the end of the measurement period by simply dividing the length of the tube reading (in ppm-hours) by the elapsed sampling time (in hours).
- To avoid overstating carbon dioxide levels because of exhalation, place passive color tubes for carbon dioxide at the waist instead of the normal position in the breathing zone.
- When breaking the tube, the holder should be directed away from the body.
- The tube holder can either be attached in a worker's breathing zone or installed in work areas to act as an area monitor.

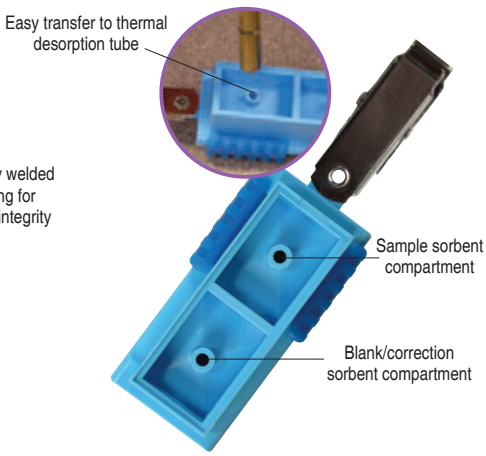
See Gastec Color Dosi Tubes online
www.skcinc.com

ULTRA Passive Samplers

Convenient Alternative to Canisters and Thermal Desorption Tubes

- **Results comparable to canisters for EPA Method TO-15 without the expense**
  - No cleaning or certification costs
  - Lower purchase price
  - No expensive shipping
- **Choose from 5 sorbents for environmental air sampling**
  - Anasorb GCB1
  - Tenax TA
  - Chromosorb 106
  - Carbopack X
  - Charcoal (solvent extraction)
- **Validated sampling (uptake) rates**
  - See skcinc.com/samplingguide/passive
- **Built-in blank/correction sorbent section available**
- **Sample integrity**
  - Manufactured in an ultra-clean environment
  - Extensive cleaning and QC procedures
  - Sonically welded housing
- **Passive alternative to EPA TO-17 — no pump required**
- **Side-by-side comparison studies demonstrate excellent sampling correlation with canisters.** ***See more information at www.skcinc.com/flysheet-1804-ultra-passive.***

Patented ULTRA® — Front view*



Patented ULTRA — Rear view*

Ordering

Select from prefilled samplers or separate sampler housing and sorbent vials.

Sorbent/Amount	Economy Prefilled Samplers, without built-in blank Qty/5 Cat. No.	Prefilled Samplers, with built-in blank Qty/5 Cat. No.	Sorbent Vials for User-filled Samplers, *require empty housing* Qty/2 Cat. No.
Anasorb GCB1,#‡ 370 mg in each compartment or vial	690-101-NB	690-101	690-201
Chromosorb 106,#† 285 mg in each compartment or vial	690-103-NB	690-103	690-203
Tenax TA,# 253 mg in each compartment or vial	690-104-NB	690-104	690-204
Charcoal,# 500 mg in each compartment or vial (solvent extraction)	690-105-NB	690-105	690-205
Carbopack X,# 400 mg in each compartment or vial	690-106-NB	690-106	690-206
Empty Sampler Housing, for user-filled ULTRA, *required*			690-200

*# Limited shelf-life; store at ≤ 39.2 F (4 C) ‡ Comparable to Carbopack B † Contact SKC for additional information on sampling rates for Chromosorb 106. * US Patent No. 6,607,581*

Sampling Accessories	Cat. No.	Qty.
Rate Reducer, 12 holes, lowers sampling rate for extended sampling time and higher concentrations	690-300	ea
Transfer Funnel, for filling sampler housing with sorbent from vials, for ULTRA only	690-301	ea
Stand for Indoor Sampling	690-302	ea
Shelter for Outdoor Sampling	690-303	ea

Analysis Accessories	Cat. No.	Qty.
Thermal Desorption Tube, Perkin Elmer, 0.25-inch OD x 3.5-inch length, includes screens and end caps	P226530	ea
Analysis Transfer Funnel, facilitates transfer of sorbent from vial to 0.25-inch OD thermal desorption tube	590-264	ea

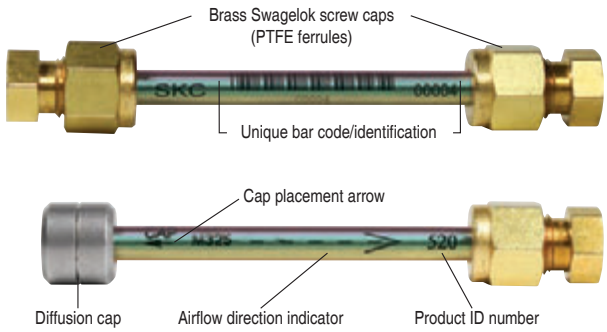
V Video | P PowerPoint | W Webinar | S Sampling Solution
Visit skcinc.com

See skcinc.com/samplingguide/passive for uptake rates.

Passive Thermal Desorption Tubes

Meet EPA Method 325 Requirements for Benzene Monitoring

- **EPA-validated sampling rates available for benzene, toluene, ethylbenzene, xylenes, and many other VOCs**
  - May be used to sample SVOCs
- **Contain pre-conditioned sorbent to meet EPA 325 requirements**
  - Lower cost option available with Anasorb GCB1 sorbent
- **Allow for extended sample times for low-level measurements**
- **Reusable after laboratory conditioning**
- **Weatherproof tube shelter available**
- **Collected compounds are analyzed quantitatively using GC or GC-MS**
- **Ideal for fenceline monitoring, indoor air sampling, and vapor intrusion studies**



SKC Passive TD Tubes are SilcoNert® 2000 deactivated 3.5-inch length x 0.25-inch OD stainless steel tubes conditioned and quality control tested to assure low background.

SKC Passive Thermal Desorption Tubes offer users an easy, accurate way to sample low-level VOCs and SVOCs over extended periods of time. These samplers meet requirements of the EPA 325 regulation for fenceline monitoring of benzene at petroleum refineries with extended sample periods of 14 days. SKC supplies sampling rates for other VOCs to expand applications.

Validated Uptake Rates (ml/min) for Selected Clean Air Act Compounds

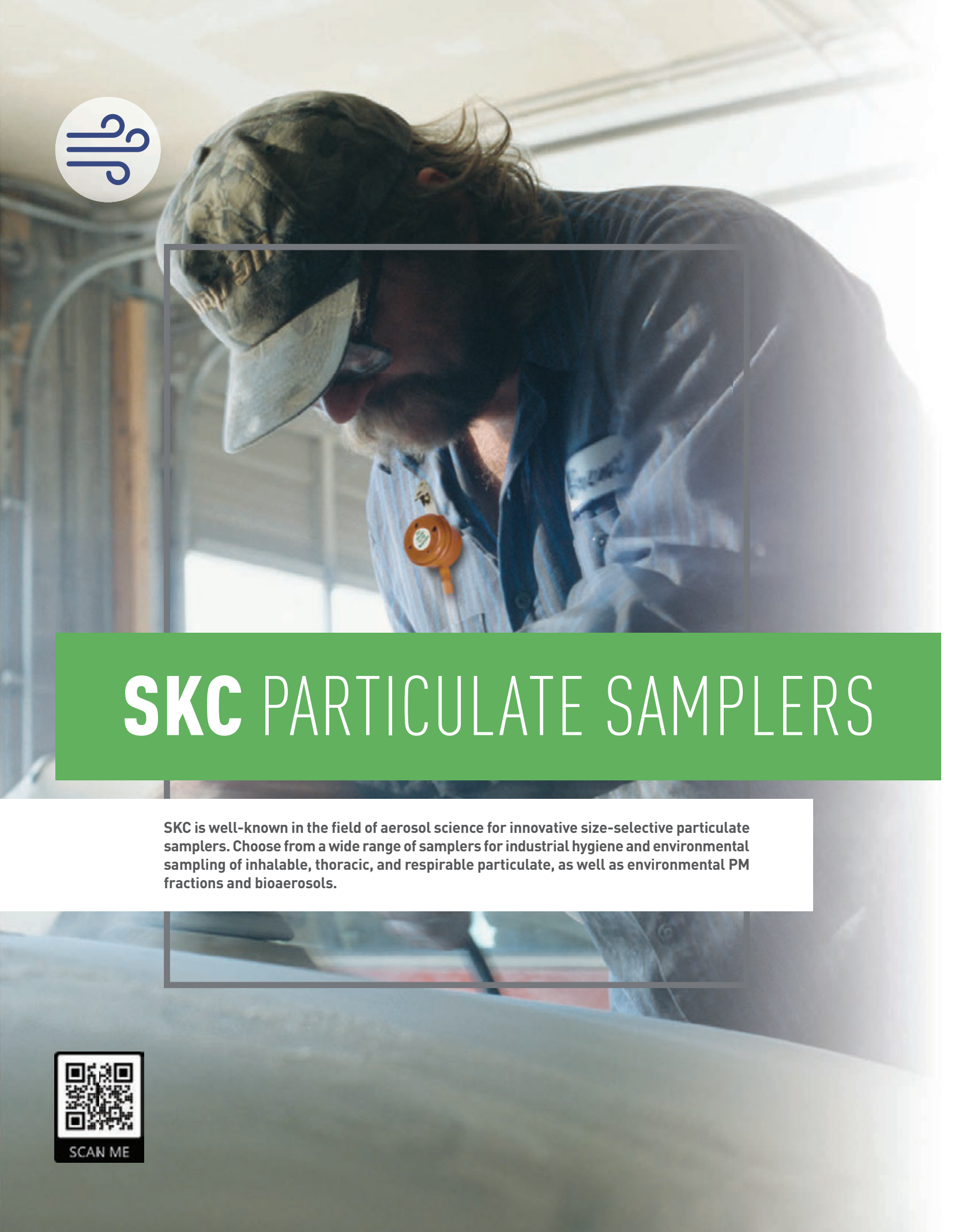
Compound	Carbopack X‡	Anasorb GCB1*
Benzene	0.67 ± 0.06	0.63 ± 0.07
Carbon tetrachloride	0.51 ± 0.06	N/A
Chlorobenzene	0.51 ± 0.06	N/A
3-Chloropropene	0.51 ± 0.3	N/A
p-Dichlorobenzene	0.45 ± 0.05	N/A
1,1-Dichloroethane	0.57 ± 0.1	N/A
1,2-Dichloroethane	0.57 ± 0.08	N/A
1,1-Dichloroethene	0.57 ± 0.14	N/A
1,2-Dichloropropane	0.52 ± 0.1	N/A
Ethylbenzene	0.46 ± 0.07	0.5
Styrene	0.50 ± 0.14	N/A
Tetrachloroethene	0.48 ± 0.05	N/A
Toluene	0.52 ± 0.14	0.56 ± 0.06
1,1,1-Trichloroethane	0.51 ± 0.1	N/A
1,1,2-Trichloroethane	0.49 ± 0.13	N/A
Trichloroethene	0.50 ± 0.05	N/A
m,p-Xylene	0.46 ± 0.09	0.47 ± 0.04
o-Xylene	0.46 ± 0.12	0.47 ± 0.04

** SKC Anasorb GCB1 is equivalent to Carbopack B/Carbograph 1.* *‡ See information about 24-hour sampling on Carbopack X at doi.org/fhgn4s.*
Reference: *EPA Method 325B–Volatile Organic Compounds from Fugitive and Area Sources, Table 12.1, epa.gov/emc, search "325b"*

MORE INFORMATION
24-hour Sampling on Carbopack X
doi.org/fhgn4s

Description	Cat. No.	Qty.
SKC Passive TD Tubes,** 3.5 x 0.25-inch OD (sized for Perkin Elmer and Markes Int'l. thermal desorbers), deactivated stainless steel tubes filled with pre-conditioned sorbent and supplied with diffusion caps and brass Swagelok screw caps with PTFE ferrules		
Carbopack X, 400 mg	**226-520**	**10**
ECONOMICAL OPTION **Anasorb GCB1,† 400 mg**	**226-521**	**10**
Diffusion Caps	**226-525**	**10**
Shelter	**226-526**	**ea**

*** Tubes must be used within 30 days of conditioning.* *† Equivalent to Carbopack B/Carbograph 1*



SKC PARTICULATE SAMPLERS

SKC is well-known in the field of aerosol science for innovative size-selective particulate samplers. Choose from a wide range of samplers for industrial hygiene and environmental sampling of inhalable, thoracic, and respirable particulate, as well as environmental PM fractions and bioaerosols.

SCAN ME

SKC Filters

Top Quality Materials for All Agency Methods

SKC provides top quality air sampling solutions for your applications. Choose from a range of filter diameters and configurations including bulk, preloaded, preweighed, and matched-weight. Professionals rely on our filters and scientific innovations such as Solu-CAP, Accu-CAP, coated filters, and the DPM Cassette. SKC – SCIENCE. SERVING PEOPLE.

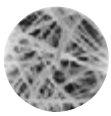
Filter Material	Features	Pages
Mixed Cellulose Ester (MCE)	• Hydrophilic • Low metal background • Autoclavable • Biologically inert • Low artifact – dissolves/clears completely	100-102
Silver	• Chemically inert • High temperature resistant and autoclavable • Uniform porosity and thickness • Bacteriostatic • Hydrophilic and inorganic	103
Polycarbonate	• Smooth surface • Thin, transparent, and non-staining • Chemically resistant; biologically inert • Thermally stable up to 284 F (140 C) • Exceptionally low tare weight	103
Polyvinyl Chloride (PVC)	• Low tare weight • Very hydrophobic • Low ash	104-105
Polytetrafluoroethylene (PTFE)	• Strong and resistant to acids, bases, and solvents • Hydrophobic • Low background • Low tare mass • Autoclavable	106
Quartz Fiber	• Binder-free • Low metal background • Hydrophobic • Autoclavable • Heat treated	107
Glass Fiber	• Binder-free • High temperature tolerant • Autoclavable • Hydrophobic • High particle retention	108
Cellulose Fiber	• 100% pure • Ashless • Autoclavable • Hydrophilic	108
Gelatin	• Pre-sterilized by gamma irradiation • High moisture content • Water soluble – dissolves easily on agar • Suitable for bioaerosols	109

MCE Membrane Filters

A Gold Standard for IH Sampling

ABOUT

Classifying Aerosol Sampling Filters



Glass fiber filter

Polycarbonate filter

Filters used for collecting airborne particles fall into three categories. Understanding the differences is important to selecting filters that are optimal for specific applications.

Fibrous Filters
Glass Fiber, Cellulose, Quartz
Intertwined fibers that form irregular openings and complex structures that allow particles to deposit on the structural elements of the filter.

Porous Membrane Filters
MCE, Nylon, PTFE, PVC, Silver
Most commonly used type of filter for aerosol sampling. High collection efficiency; captures smaller than stated pore size.

Capillary Pore Filters
Polycarbonate
Smooth translucent surface with straight-through cylindrical holes of uniform diameter. Good for electron microscopy and x-ray fluorescence.

Nano-Neat – Certified Background Level for 18 Metals

SKC tests and certifies background traces of 18 metals to ensure suitability of Nano-Neat for sampling and analysis with NIOSH Method 7300. Each box of Nano-Neat Cassettes contains a list of background testing results for each metal below. *See ordering below right.*

Aluminum (Al)	Lead (Pb)
Antimony (Sb)	Lithium (Li)
Arsenic (As)	Magnesium (Mg)
Beryllium (Be)	Manganese (Mn)
Cadmium (Cd)	Molybdenum (Mo)
Chromium (Cr)	Nickel (Ni)
Cobalt (Co)	Titanium (Ti)
Copper (Cu)	Vanadium (V)
Iron (Fe)	Zinc (Zn)

Questions?
Contact skctech@skcinc.com.

MCE Filters

All SKC MCE filters are independently tested to verify low background.

Diameter (mm)	Pore Size (µm)	Support Pad‡	Notes	Cat. No.	Qty.
13	5.0	No		225-8050	100
25	0.45	No		225-1911	100
25	0.8	Yes		225-19	100
25	0.8	No	use with IOM *(pp. 120-121)*	225-1930	100
25	0.8	No	black grid	225-1913	100
25	1.2	No	recommended for Button Sampler *(p. 122)*	225-1912	100
37	0.45	No		225-1914	100
37	0.45	Yes		225-9	100
37	0.8	No		225-1939	100
37	0.8	Yes		225-5	100
37	5.0	No		225-1938	100
47	0.45	No		225-506	100
47	0.8	No		225-504	100

‡ *Filter supports available on page 115*

Matched-weight MCE Filter Pairs for User-loading

Matched-weight MCE filter pairs are certified as matched in weight to within 50 µg. Load the filters into a cassette; the top filter collects the contaminant, the bottom filter acts as a control. No preweighing or conditioning is required. After sampling, both filters are weighed and the difference between weights is the sample weight.

Diameter (mm)	Filter Specifications	Cat. No.	Qty.
37	MCE, 0.8 µm, matched-weight within 50 µg, filter pairs only	225-532	50
47	MCE, 0.8 µm, matched-weight within 50 µg, filter pairs only	225-531	50

Preloaded MCE Filters

These preloaded filters include supports and are in SureSeal leak-free cassettes requiring a SureSeal Cassette Opener; see page 117.

Diameter (mm)	Filter Specifications	Cassette Description	Cat. No.	Qty.
25	MCE, 0.8 µm	3-pc clear plastic, banded	225-3100**	50
25	MCE, 1.2 µm	3-pc black conductive, banded	225-507*	50
37	MCE, 0.45 µm	3-pc black conductive, banded	225-1924	50
37	MCE, 0.45 µm	4-pc clear styrene, banded	225-1925*†	50
37	MCE, 0.8 µm	2-pc clear styrene, banded	225-508	50
37	MCE, 0.8 µm	3-pc clear styrene, banded	225-3-01	50
		3-pc clear styrene, not banded	225-3-01NB	50

* *BestChek certified; see page 102 for details* † *Available in conductive cassette* ** *Available with tamper-evident band around plug*

Matched-weight MCE Filters Preloaded in Cassettes

These preloaded filters include supports and are in SureSeal leak-free cassettes requiring a SureSeal Cassette Opener; see page 117.

Diameter (mm)	Filter Specifications	Cassette Description	Cat. No.	Qty.
25	MCE, 0.8 µm, matched-weight within 50 µg	2-pc clear styrene, banded	225-525**	50
37	MCE, 0.8 µm, matched-weight within 100 µg	3-pc clear styrene, banded	225-3-02	50
37	MCE, 0.8 µm, matched-weight within 50 µg	2-pc clear styrene, banded	225-502	50
37	MCE, 0.8 µm, matched-weight within 50 µg	3-pc clear styrene, banded	225-503	50

** *Available with tamper-evident band around plug*

Nano-Neat MCE Filter Cassettes — for Clean Environments

Ultra-pure for sampling workplace metals; certified background levels for 18 metals per filter (see left). *Cassettes are tinted purple for easy identification. Each box contains a Certificate of Compliance. These preloaded filters include supports and are in SureSeal leak-free cassettes requiring a SureSeal Cassette Opener; see page 117.*

Diameter (mm)	Filter Specifications	Cassette Description	Cat. No.	Qty.
25	MCE, 0.8 µm, Nano-Neat	2-pc purple styrene, banded	225-8402	50
37	MCE, 0.8 µm, Nano-Neat	2-pc purple styrene, banded	225-8408	50

Solu-CAP Internal Capsule Sampler

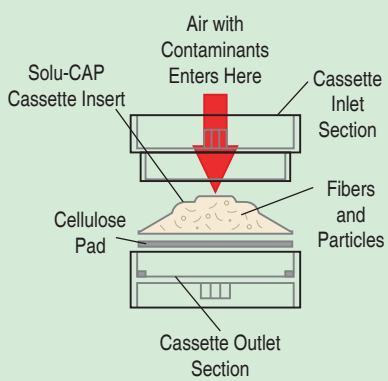
Captures the Entire Sample for Metals Analysis

- **Design specified in NIOSH Method 7306**
- **Meets NIOSH wall deposits requirement**
- **Eliminates need for lab to wipe or rinse cassette walls**
- **Ensures all collected sample is analyzed**
- **No assembly required**
  - Supplied preloaded into 37-mm, 2-piece SKC cassette with support pad
- **Digestible cellulose acetate dome on MCE filter contains entire sample**
  - Completely soluble for analysis following NIOSH 7300 digestive procedure

AirChek Series Sample Pumps – Perfect partners for Solu-CAP
see pages 12-23

Use Solu-CAP® Internal Capsule Samplers to eliminate sample loss and meet NIOSH requirements for inclusion of all wall deposits. Solu-CAP's digestible cellulose acetate dome is sealed to a quality MCE filter. The user samples and sends the cassette to a laboratory. The lab removes the Solu-CAP insert, digests it in an acid solution per standard procedures, and performs analysis for airborne metals following published methods. **No sample loss!** The Solu-CAP design is specified in NIOSH 7306.

Solu-CAP = 100% Sample Contained



Eliminate sample loss from:

- ✕ Excessive filter loading during collection
- ✕ Filter transfer in the lab
- ✕ Cassette wall losses

Preloaded Solu-CAP Internal Capsule Sampler

Description	Cat. No.	Qty.
Preloaded 37-mm Solu-CAP with cellulose acetate dome sealed to 0.8-µm MCE filter in 2-piece SKC cassette with support, *requires a sample pump (pp. 12-23) and SureSeal Cassette Opener (see below)*	225-8517	50
Accessory		
SureSeal Cassette Opener	225-13-5B	ea

SKC Solu-CAPs can be made using Nano-Neat filters (see page 100). Contact SKC!

New to Air Sampling?

Access free SKC expertise and training!

WWW.SKCINC.COM

SKCINC.COM

References

Harper, M. and Ashley, K., "Acid-Soluble Internal Capsules for Closed-Face Cassette Elemental Sampling and Analysis of Workplace Air," Jnl. of Occup. and Env. Hyg., 10:6, 2013, pp. 297-306, https://doi.org/xj6

Ashley, K. and Harper, M., "Analytical Performance Issues: Closed-Face Filter Cassette (CFC) Sampling – Guidance on Procedure for Inclusion of Material Adhering to Internal Sampler Surfaces," Jnl. of Occup. and Env. Hyg., 10:3, 2013, pp. D29-D33, https://doi.org/wv3

NIOSH Method 7306 Elements by Cellulosic Internal Capsule Sampler, https://bit.ly/3uZ7AAi

V Video | P PowerPoint | W Webinar | S Sampling Solution

Visit skcinc.com

Certified BestChek Asbestos Cassettes

The Highest Standard for Cassette Reliability

ABOUT

The 5 Cs of Asbestos Cassettes
Only from SKC — BestChek® cassettes meet or exceed NIOSH, OSHA, and ASTM standards in Count, Clearing, Conductivity, Collection Area, and Construction.

SKC BestChek cassettes are certified only after they are tested twice for low background.

Specify SKC BestChek Asbestos Cassettes — your assurance of reliability and accuracy.

SKC Certified BestChek Filters in Conductive Black Polypropylene Cassettes

These preloaded filters include cellulose supports.

Diameter (mm)	Filter Specifications	Cassette Description		Cat. No.	Qty.
25	MCE, 0.8 µm	with cowl, banded		225-321	50
25	MCE, 0.8 µm	with cowl, banded, with stand-up plug in outlet end		225-321A	50
25	MCE, 0.8 µm, black grid	with cowl, banded		225-326	50
25	MCE, 1.2 µm, black grid	with cowl, banded		225-1934	50
25	MCE, 0.45 µm* TEM analysis	with cowl, banded, with support and 5.0-µm diffuser pad		225-327	50

* *Available as microvacuum carpet cassette with nozzle; see below left*

Microvacuum Cassettes for Asbestos

- Nozzle for easy sampling of settled dust on surfaces
- Use with personal sample pump at 2 L/min

Conductive black polypropylene with cowl and nozzle, BestChek 25-mm, 0.45-µm MCE filter for TEM analysis, and cellulose support
Cat. No. 225-322

Non-conductive clear styrene with nozzle, 37-mm, 0.45-µm MCE filter, for TEM analysis, and cellulose support
Cat. No. 225-9543

Asbestos Sampling Pumps

AirLite Personal Pump

Easy, Economical Asbestos Sampling

- Constant flows to 3000 ml/min
- Alkaline battery powered, over 10 hours run time
- Rugged
- Weighs only 12 ounces
- Simple operation with flow fault feature
- Model available with timer

See details and ordering on page 31.

Flite4 Area Pump

Programmable High Flow Asbestos Pump

- Flows from 2 to 20 L/min
- Battery or AC operation, long run times
- Robust powder-coated mild steel casing with handle
- Weighs 4.5 pounds (2.06 kg)
- Programmable
- Backlit LCD display
- Can be operated in two orientations

See details and ordering on page 30.

Asbestos Sampling Heads and Accessories

Description	Cat. No.	Qty.
Asbestos Sampling Heads, 25 mm, require 25-mm gridded filters		
Plastic cowl	225-54	ea
Aluminum cowl	225-54A	ea
Rigid Sampling Mast, aluminum, designed for use with Flite4 pump (see above), 1 meter high		
Two piece	901-213	ea
Four piece	901-214	ea

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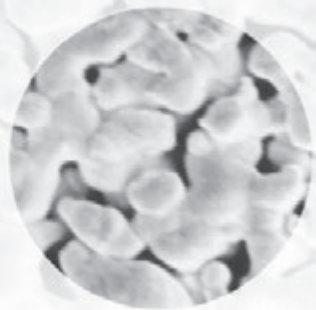
Silver Membrane Filters

Specified for X-ray Diffraction Analysis



- **Chemically inert, high temperature resistant**
  - Autoclave and reuse repeatedly# without loss of performance
- **99.97% pure inorganic metallic silver**
- **Uniform porosity and thickness, smooth surface**
  - Ideal for NIOSH X-ray diffraction methods for crystalline silica, lead sulfide, boron carbide, and chrysotile asbestos
- **Hydrophilic and bacteriostatic**

Diameter (mm)	Pore Size (µm)	Cat. No.	Qty.
25	0.8	**225-1803**	**50**
25	0.45	**225-1802**	**50**
37	0.8	**225-1801**	**25**
47	0.8	**225-1804**	**25**

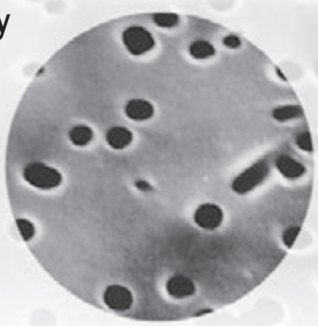
Single use only for silica analysis

Additional diameter and pore size silver membrane filters are available as a special order.

For size-selective samplers
see pages 118-132

Polycarbonate Filters

Ideal for Microscopy



- **Chemically resistant, thermally stable,† and strong**
- **Thin, transparent, non-staining, and smooth**
  - Ideal for light and electron microscopy
  - Exceptional background for sample observations
- **Exceptionally low tare weight**
- **Biologically inert**

Diameter (mm)	Pore Size (µm)	Support Pad‡	Notes	Cat. No.	Qty.
25	0.4	No		**225-1608**	**100**
25	0.8	No	use with IOM *(pp. 120-121)*	**225-1601**	**100**
37	0.4	No		**225-1609**	**100**
37	0.8	No		**225-1602**	**100**
47	0.4	No		**225-1610**	**100**

‡ *Filter supports available on page 115*

† *Maximum operating temperature is 284 F (140 C).*

For filter sampling accessories
see pages 114-117

Preloaded Polycarbonate Filters

These preloaded filters include supports and are in SureSeal leak-free cassettes requiring a SureSeal Cassette Opener; see page 117.

Diameter (mm)	Pore Size (µm)	Support Pad	Cassette Description	Cat. No.	Qty.
25	0.8	Yes	3-piece conductive, with cowl, banded	**225-1604**	**50**

Microvacuum Cassette with Polycarbonate Filter

These preloaded filters include supports and are in SureSeal leak-free cassettes requiring a SureSeal Cassette Opener; see page 117.

Diameter (mm)	Pore Size (µm)	Support Pad	Cassette Description	Cat. No.	Qty.
37	0.4	Yes	3-piece styrene (non-conductive) with nozzle; microvacuum*	**225-9542***	**ea**

* *Available in a Carpet Sampling Cassette Kit; see page 138*

For sample pumps
see pages 16-21

Accu-CAP Internal Capsule

Eliminates Cassette Wall Losses

For filter cassette holders, openers, adapters, and other accessories
see pages 114-117

- Meets specifications of NIOSH Method 0501 for gravimetric analysis
- Ensures entire sample is captured and analyzed
- Fits inside a 37-mm, 2-piece SKC cassette with support pad
- Static-dissipative plastic dome on PVC filter contains entire sample
  - No cassette rinsing or wiping required
  - Prevents loss of sample during transport
  - No particles dislodged from filter during analysis preparation
- Suitable for sampling total dust (NIOSH 0501), respirable dust (NIOSH 0600), carbon black (NIOSH 5100), and more

SKC recommends AirChek Series Pumps for use with Accu-CAP
see pages 12-21

Use Accu-CAP® Internal Capsules to meet NIOSH 0501 requirements for inclusion of all wall deposits in the sample. Accu-CAP features a static-dissipative plastic dome sealed to a quality PVC filter. The user preweighs the Accu-CAP, places it between the inlet and outlet sections of a two-piece 37-mm SKC-manufactured cassette with support pad, samples, removes Accu-CAP from the cassette, and postweighs it. **Accu-CAP effectively contains 100% of sampled particulate!**

Accu-CAP is Easy to Use

Prepare SKC 2-piece cassette with support pad.

Weigh Accu-CAP and insert in cassette.

Complete cassette assembly. After sampling, remove Accu-CAP from cassette and weigh.

References
Ashley, K. and Harper, M., "Analytical Performance Issues: Closed-Face Filter Cassette (CFC) Sampling – Guidance on Procedure for Inclusion of Material Adhering to Internal Sampler Surfaces," Jnl. of Occup. and Env. Hyg., 10:3, 2013, pp. D29-D33, https://doi.org/wv3

NIOSH Backup Data Report, NIOSH Method No. 0501/5100, www.cdc.gov/niosh/nmam/pdf/0501_5100_bud.pdf

60 pk means more savings!

Accu-CAP Internal Capsule

Description	Cat. No.	Qty.
37-mm Accu-CAP with plastic dome sealed to 5.0-µm pore size PVC filter, *requires 37-mm cassettes (p. 113) and support pads (p. 115)*	225-8516GLA	60

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GLA-5000 PVC Membrane Filters

The No. 1 Filter for Silica and Other Dusts

- **Low ash, suitable for multiple NIOSH/OSHA/ASTM/HSE air sampling methods**
  - Silica, metals, dust (total and respirable)
  - OSHA Method ID-215 (V.2) for hexavalent chromium
- **Low tare weight and moisture pickup for gravimetric stability**
  - ≤ 0.5% after 24 hours at 48% RH and 122 F (50 C)
- **Preloaded 25 and 37-mm cassettes available**
- **Available in Accu-CAP Internal Capsule**
- **Both gravimetric and chemical analyses on the same filter using NIOSH 7300 or 7301 for metals (elements)**

For PPI Sampler with preweighed PVC filter
see page 127

PVC Filters

Diameter (mm)	Pore Size (µm)	Support Pad‡	Cat. No.	Qty.
25	5.0	No	225-5-25†	100
37	5.0	Yes	225-5-37-P	100
			225-80601K	1000
37	5.0	No	225-5-37	100
47	5.0	No	225-5-47	100

‡ *Filter supports available on page 115* † *Recommended for use with IOM and Button Samplers; see pages 120-122*

Accu-CAP PVC Internal Capsule — *see page 104*

Clear plastic capsule heat-sealed to a filter; fits between parts of a two-piece SKC cassette with support pad; prevents cassette wall losses; ideal for gravimetric determinations for NIOSH 0501, 0600, and 5100.

Diameter (mm)	Pore Size (µm)	Cat. No.	Qty.
37	5.0	225-8516GLA	60

Preloaded PVC Filters

These preloaded filters include supports and are in SureSeal leak-free cassettes requiring a SureSeal Cassette Opener; see page 117.

Diameter (mm)	Filter Specifications	Cassette Description	Cat. No.	Qty.
25	5.0 µm	2-piece clear styrene, banded	225-8214**	50
25	5.0 µm	3-piece clear styrene, banded	225-8215	50
37	5.0 µm	2-piece clear styrene, banded	225-802	50
37	5.0 µm	3-piece clear styrene, banded	225-803**	50
Preloaded Preweighed PVC Filters				
37	5.0 µm, preweighed, 5 decimals	2-piece clear styrene, banded	225-8204A	10
			225-8205A	50
37	5.0 µm, preweighed, 5 decimals	3-piece clear styrene, banded	225-8208A	10
			225-8209A	50

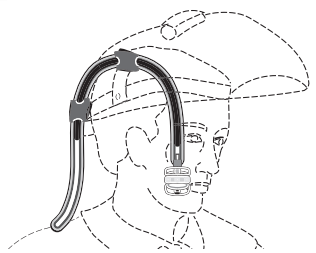
** *Available with tamper-evident band around plugs*

Matched-weight PVC Filters

These comprise two same-type filters matched in weight to within 25 µg; they do not require pre-weighing. Those supplied preloaded in SureSeal leak-free cassettes require a SureSeal Cassette Opener; see page 117.

Diameter (mm)	Filter Specifications	Description	Cat. No.	Qty.
37	5.0 µm, matched-weight within 25 µg	Filter pairs only*	225-8222*	50
37	5.0 µm, matched-weight within 25 µg	2-piece clear styrene, banded	225-8201	50
37	5.0 µm, matched-weight within 25 µg	3-piece clear styrene, banded	225-8202	50

* *Not preloaded in cassettes*



Helmet Adapter#

Ideal for welders or workers who wear a helmet with face shield; effectively holds a filter cassette or sample tube in the breathing zone regardless of visor position

Cat. No. 225-600

\# *Developed in Canada by IRSST (Institut de recherche Robert-Sauvé en santé et en sécurité du travail)*

Face Level Headset

With its headband-behind-the-neck design, the Face Level Headset securely holds welding aerosol sampling media while providing a comfortable fit under a welding helmet.

See page 117 for details

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PTFE Membrane Filters

Aerosol Sampling in Aggressive Chemical Environments

- Hydrophobic
- Low background for interference-free chemical determinations
- Strong and resistant to acids, bases, and solvents
- Low tare mass for accurate gravimetric analysis
- Temperature resistant to 500 F (260 C) — autoclavable
- Suitable for sampling in environments also containing water vapor
- Also available in 10.0-µm pore size — contact SKC

PTFE filters are the versatile choice. The material's unique properties make it ideal for gravimetric, chemical, and/or microscopic analysis of sample particulate. PTFE filters are used for environmental particulate matter sampling, metalworking fluids, in the pharmaceutical industry, and more.

• TECH TIPS •

- Back pressure on PTFE filters can vary within the same lot.
- PTFE filter temperature resistance provides stability up to 500 F (260 C).
- Use PTFE filters for industrial hygiene sampling of polynuclear aromatic hydrocarbons (PAHs).
- These hydrophobic PTFE filters are specified for environmental particulate sampling with gravimetric analysis.

For size-selective samplers
see pages 118-132

Looking for preweighed PTFE Membrane Filters?
Contact SKC for details.

For Sample Pumps
see pages 14-23

PTFE Membrane Filters

Diameter (mm)	Pore Size (µm)	Support Pad‡	Notes	Cat. No.	Qty.
25	0.5	No	unlaminated	**225-17-21**	**100**
25	1.0	No	unlaminated	**225-17-22**	**100**
25	2.0	No	unlaminated	**225-17-23**	**100**
25	5.0	No	unlaminated	**225-1728A**	**100**
37	0.5	No	unlaminated	**225-17-31**	**100**
37	1.0	No	unlaminated	**225-17-32**	**100**
37	2.0	No	unlaminated	**225-17-33**	**100**
37	5.0	Yes	unlaminated	**225-17P**	**100**
47	0.5	No	unlaminated	**225-17-41**	**100**
47	2.0	No	unlaminated	**225-17-43**	**100**
37	0.45	Yes	on polypropylene support	**225-17-04**	**100**
37	1.0	Yes	on polypropylene support	**225-17-01**	**100**
25	3.0	No	with PMP support ring	**225-1711†**	**50**
37	2.0	No	with PMP support ring	**225-1709**	**50**
47	2.0	No	with PMP support ring	**225-1747**	**50**
37	0.3	No	for viruses and other bioaerosols, laminated spun-bound polyester; *available preloaded, see below*	**225-1722**	**100**

† *Recommended for use with the Button Sampler; see page 122* ‡ *Filter support pads available on page 115*

Preloaded PTFE Membrane Filters

These preloaded filters include supports and are in SureSeal leak-free cassettes requiring a SureSeal Cassette Opener; see page 117.

Diameter (mm)	Filter Specifications	Cassette Description	Cat. No.	Qty.
25	PTFE, 1.0 µm, with polyethylene support pad	2-piece black conductive, goblet style, not banded	**225-1725**	**50**
		3-piece black conductive, goblet style	**225-1721**	**50**
37	PTFE, 0.3 µm, laminated with spun-bound polyester with cellulose support; for viruses and other bioaerosols	3-piece clear styrene, banded	**225-1723**	**50**
37	PTFE, 1.0 µm, with cellulose support	3-piece clear styrene, banded	**225-1715**	**50**
37	PTFE, 2.0 µm, with cellulose ring	2-piece opaque plastic, banded	**225-1713****	**50**

** *Available with tamper-evident band around plugs*

Diesel Particulate Matter Cassettes

Also Suitable for Carbon Nanotubes and Fibers

DPM Cassette — Preloaded Quartz Filters with Submicron Impactor

ONLY FROM SKC

- Preloaded in specially designed cassette with internal size-selective impactor
  - Screens particles ≥ 1 micron
  - Contains two quartz filters: one for sample collection and one for dynamic blank
- Use for elemental carbon analysis of DPM or for carbon nanotubes (CNTs) and carbon nanofibers (CNFs) (NIOSH Method 5040); *see NIOSH CIB 65, cdc.gov/niosh/docs/2013-145*

Diameter (mm)	Filter Specifications	Cassette Description	Notes	Cat. No.	Qty.
37	2 heat-treated, binder-free Tissuquartz	1-piece with impactor, tamper-evident sealed, single use†	NIOSH 5040 analysis, average sample deposition area on DPM Cassette is 8.04 cm^2	**225-317***	**10**

* *Limited shelf-life* † *Requires 1/4-inch ID tubing or Filter Cassette/Cyclone Holder; see pp. 114*

Preloaded Quartz Filters Without Submicron Impactor

- An economical choice when no interfering respirable dusts are present
- Meets NIOSH 5040 specifications for elemental carbon
- Preloaded into standard 37 or 25-mm, 3-piece clear styrene cassette

These preloaded filters include supports and are in SureSeal leak-free cassettes requiring a SureSeal Cassette Opener; see page 117.

Diameter (mm)	Filter Specifications	Cassette Description	Notes	Cat. No.	Qty.
25	Heat-treated, binder-free Tissuquartz, support pad	3-piece clear styrene, banded	Meets NIOSH NEAT 2.0 protocols for NIOSH 5040 analysis	**225-401-25**	**50**
37	Heat-treated, binder-free R-100 quartz, support pad	3-piece clear styrene, banded	NIOSH 5040	**225-401****	**50**

** *Available with tamper-evident band around plugs*

Quartz Fiber Filters

For Elemental/Organic Carbon, DPM, and Trace-level Contaminants

- Heat treated to reduce trace organics
- Binder-free
- Low metal background

Diameter (mm)	Description	Cat. No.	Qty.
25	Type R-100	**225-1824#**	**100**
25	Tissuquartz	**225-1825¥**	**100**
37	Tissuquartz	**225-1822¥**	**25**
37	Type R-100	**225-1827#**	**100**
47	Tissuquartz	**225-1823¥**	**25**
		225-1811¥	**100**
47	Type R-100	**225-1830#**	**100**
102	QM-A	**225-1808‡**	**100**
Preloaded Quartz Filters specified in NIOSH 7908 for Phosphoric Acid and Sulfuric Acid			
37	Tissuquartz with cellulose support, 2-piece clear styrene, banded	**225-9033**	**10**

¥ *432 µm thick* # *380 µm thick* ‡ *450 µm thick*

DPM Cyclone

- Extended retaining ring and special sealing securely hold SKC DPM Cassettes (*at left*)
- Conductive plastic construction prevents the buildup of electrostatic effects
- Operate at 2 L/min when used with the DPM Cassette

DPM Cyclone includes grit pot, retaining ring, and clip to attach to worker's clothing
Cat. No. 225-68

See GS-1 Cyclone on page 124

ABOUT

Quartz Fiber Filters

Q: What is the difference between Type R-100 and Tissuquartz fiber filters?

A: Type R-100 filters meet NIOSH requirements: 99.97% retention efficiency for 0.3-µm dioctylphthalate (DOP) particles up to a 200-mg filter loading.

Tissuquartz has a typical retention efficiency of 99.90% for 0.3-µm DOP particles at 32 L/min per 100 cm^2 filter media.

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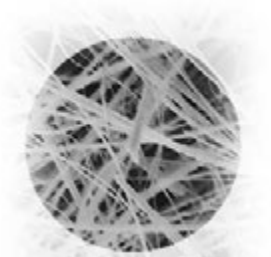
Glass Fiber Filters

ABOUT

Fibrous Filter Pore Size Rating
The pore size rating for fibrous filters is commonly termed "nominal" or approximate. This is due to the method for determining pore size. Fibrous filters are made of intertwined fibers or sintered particles. These form irregular openings through which air passes, but most particles do not. Pore size testing for fibrous filters is usually achieved by passing liquid containing particles of a known size through the filter. If an acceptable number of particles are trapped, that particle size becomes the "liquid nominal," which is typically stated as, "Filter removes > xx% of particles ≥ x µm."



Glass fiber filters are specified in EPA methods for environmental particulate matter gravimetric analysis

Need a different size or tamper-evident banded cassette?

Contact SKC!

- High-temperature tolerant — autoclavable
- Chemical and pH resistant; biologically inert
- High particle retention
- Hydrophobic
- Made of binder-free borosilicate glass fiber for purity
- Available with binder for excellent wet strength, easier handling, and filter integrity

SKC quality Glass Fiber Filters are suitable for both liquid and air filtration and are used where high flow rate and micron/submicron filtration are required. Select from several options.

A/E Glass Fiber Filters

Pure and ideal for gravimetric analysis of air pollutants and testing dissolved/suspended wastewater solids.

Dia. (mm)	Pore Size (µm)Δ	Description	Cat. No.	Qty.
13	1.0	Binder free	**225-16**	**500**
25	1.0	Binder free, recommended for IOM & Button Sampler *(pp. 120-122)*	**225-702**	**500**
37	1.0	Binder free	**225-7**	**500**
47	1.0	Binder free	**225-7047** **225-714**	**100** **500**
8 x 10 inches	1.0	Binder free	**225-7-07**	**100**

Δ *Liquid nominal; see About at above left*

Specialty Glass Fiber Filters

These specialty options provide for applications that require additional characteristics such as high purity, strength, and long duration or suitability for high pressure, wet, high dirt loading, and large sample volumes.

Dia. (mm)	Pore Size (µm)Δ	Description	Cat. No.	Qty.
25	1.0	Extra thick (50 mil) with acrylic binder	**225-703**	**100**
25	1.6	Binder free, GF/A	**225-58F**	**100**
25	0.7	Binder free, GF/F	**225-731**	**100**
37	1.0	Binder free, A/B	**225-701**	**100**
37	—	PTFE coated	**225-705**	**100**

Δ *Liquid nominal; see About at above left*

Preloaded Glass Fiber Filters

SKC preloaded filters are in SureSeal leak-free cassettes requiring a SureSeal Cassette Opener; see page 117.

Dia. (mm)	Filter Specifications	Cassette Description	Cat. No.	Qty.
25	Glass Fiber, A/E, 1.0 µm,Δ no support	2-piece clear plastic, banded	**225-710**	**50**
25	Glass Fiber, Type GF/F, 0.7 µm, polyethylene support	3-piece black conductive	**225-730**	**50**
37	Glass Fiber, A/E, 1.0 µm,Δ cellulose support	2-piece clear plastic, banded	**225-709****	**50**
37	Glass Fiber, A/E, 1.0 µm,Δ cellulose support	3-piece clear plastic, banded	**225-706****	**50**

Δ *Liquid nominal; see About at above left* ** *Available with tamper-evident band around plugs*

Glass Fiber GF/F is available in 37 and 47-mm packs for EPA Method 1311 (TCLP). Contact SKC!

Cellulose Fiber Filters

- Ideal for gravimetric sampling methods
- 100% pure, ashless cellulose fiber

Dia. (mm)	Pore Size (µm)	Description	Cat. No.	Qty.
37	—	Type 40	**225-18A**	**500**

Gelatin Membrane Filters

Maintain Viability of Collected Microorganisms

- **Absolute retention rate**
  - 99.9995% for *Bacillus subtilis var.* niger spores‡
  - 99.94% for T3 phages (coli phages)‡
  - 99.9% T1 phages (coli phages)‡
- **High moisture content**
  - Maintain microbe viability for short sampling periods
- **Completely water soluble**
  - Dissolve easily when placed on agar
  - Provide the solubility required for virus sampling
- **Pre-sterilized by gamma irradiation**
- **Ideal for monitoring in pharmaceutical plants**
- **Can be used to monitor in areas where disinfectants or antibiotics are present**

The unique properties of gelatin membrane filters provide unequalled bacteria retention levels for quantitative analysis. Sampling with gelatin membrane filters is easy and efficient and can provide information about relative changes in microorganism concentration throughout the day. Gelatin membrane filters dissolve easily when placed on agar, allowing for a gentle transition from sample medium to growth medium. **For maximum culturability and superior collection of inhalable-size bioaerosols, combine 25-mm gelatin membrane filters with the SKC Button Sampler; *see below*.**

Dia. (mm)	Support Pad	Notes	Cat. No.	Qty.
25	No	Water soluble	225-9551†*	50
37	No	Water soluble	225-9552*	50

† *Recommended for use with IOM and Button Samplers; see pages 120-122*
* *Storage at 39.2 to 46.4 F (4 to 8 C) recommended. Avoid temperatures < 39.2 F (4 C), moisture, and chemical vapors.*
‡ *At inlet velocities of 0.25 m/s, 0.3 m/s (80% RH), and 0.3 m/s (50% RH), respectively*

Gelatin Membrane Filters with the Button Sampler

Autoclavable Inhalable Sampler

The sterile, high moisture properties of gelatin membrane filters combine with the unique features of the Button Sampler for maximum microorganism survivability and superior collection of inhalable-size bioaerosols. The autoclavable Button Sampler's unique inlet contains evenly spaced holes that act as sampling orifices for multi-directional sampling. The proximity of the gelatin membrane filter to the inlet minimizes transmission losses and provides for equal distribution of particles and low intersample variation for viable and non-viable analyses. ***For more information on the Button Sampler, see page 122.***

Description		Cat. No.	Qty.
Button Sampler Pump Kit includes Button Sampler, standard AirChek XR5000 Sample Pump, single charger, 3 feet (0.9 meter) of Tygon tubing, and calibration adapter, *requires a 25-mm filter*	100-240 V	210-4121	ea

ABOUT

Why Use Gelatin Membrane Filters?

Sampling microbes with traditional filter materials has been known to reduce culturability due to desiccation of the microbes. The high moisture content of gelatin membrane filters helps to maintain microorganism viability for sampling periods up to 30 minutes. In addition, studies with T3 viruses and coronavirus have shown gelatin membrane filters to be the most suitable for sampling viruses (low passage and high detection sensitivity) due to their complete solubility.

References

Fairfield Estill, C., Baron, P., et al., "Comparison of Air Sampling Methods for Aerosolized Spores of B. anthracis Sterne," Jnl. of Occ. and Env. Hyg., 8:3, 2011, pp. 179-186, https://doi.org/cppbh7

Yao, M. and Mainelis, G., "Analysis of Portable Impactor Performance for Enumeration of Viable Bioaerosols," Jnl. of Occ. and Env. Hyg., 4:7, 2007, pp. 514-524, https://doi.org/cxd7kk

Burton, N., Grinshpun, S., and Reponen, T., "Physical Collection Efficiency of Filter Materials for Bacteria and Viruses," Annals of Occup. Hygiene, 51:2, 2007, pp. 143-151, http://dx.doi.org/10.1093/annhyg/mel073

For sample pumps
see pages 14-23

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Coated Filter Selection Guide

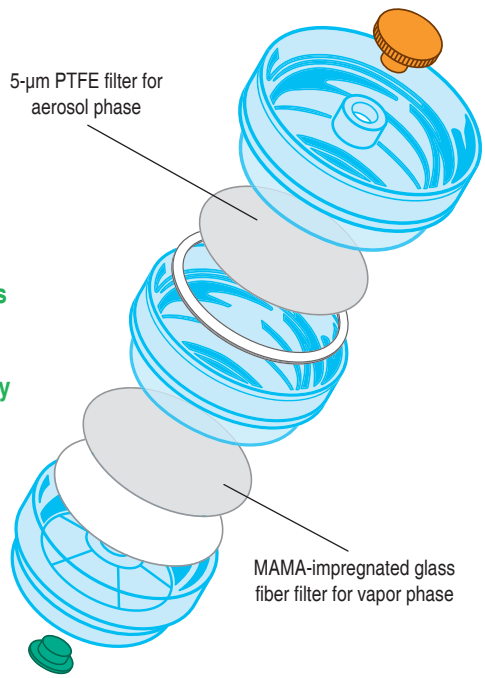
Chemical	Method	Preloaded Filter; Coating (in 37-mm cassettes)	Cat. No.*	Qty.
Acetic anhydride	OSHA 102	2 Glass Fiber filters; veratrylamine and di-n-octyl phthalate	225-9010 §	10
4-Aminobiphenyl	OSHA 93	2 Glass Fiber filters; sulfuric acid	225-9004	10
Aniline	NIOSH 2017 ¥	2 Glass Fiber filters; sulfuric acid	225-9004 ¥	10
Arsenic, volatile compounds	OSHA ID-1006	1 MCE filter and plastic pad; untreated and 1 cellulose support pad; sodium carbonate	225-9001	10
Benzidine	OSHA 65	2 Glass Fiber filters; sulfuric acid	225-9004	10
Bromine, chlorine	NIOSH 6011	1 **25-mm** PTFE pre-filter and polypropylene support; 1 **25-mm** specially cleaned silver membrane and polypropylene support **(in 25-mm cassette)**	225-9006	5
Crotonaldehyde	OSHA 81	2 Glass Fiber filters; 2,4-dinitrophenylhydrazine and phosphoric acid	225-9019 §	10
o-Dianisidine	OSHA 71	2 Glass Fiber filters; sulfuric acid	225-9004	10
3,3'-Dichlorobenzidine	OSHA 65	2 Glass Fiber filters; sulfuric acid	225-9004	10
Diisocyanates (HDI; 2,6-TDI; 2,4-TDI)	ASTM D5836 Δ OSHA 42	1 Glass Fiber filter and cellulose support; 1-(2-pyridyl)piperazine	225-9013 †§ 225-9002 §	10 10
Diphenylamine	OSHA 78	2 Glass Fiber filters; sulfuric acid	225-9004	10
Fluorides	OSHA ID-110 NIOSH 7902 ASTM D4765	1 MCE filter and plastic pad; untreated and 1 cellulose support pad; sodium carbonate	225-9001 #	10
Fluorides, particulate	NIOSH 7906	2 Nitrocellulose filters; 1 coated with sodium carbonate, 1 uncoated	225-9031	10
Glutaraldehyde	OSHA 64	2 Glass Fiber filters; 2,4-dinitrophenylhydrazine and phosphoric acid	225-9003 §	10
Glyoxal	For IFV	2 **25-mm** Glass Fiber filters; 2,4-dinitrophenylhydrazine *(filters only, in jar)*	225-9036 §	10
Hydrazine	OSHA 108	2 Glass Fiber filters; sulfuric acid	225-9012	10
Hydrofluoric acid	NIOSH 7906	2 Nitrocellulose filters; 1 coated with sodium carbonate, 1 uncoated	225-9031	10
Hydrogen bromide	NIOSH 7907	2 Quartz filters (R-100); 1 coated with sodium carbonate, 1 uncoated	225-9032	10
Hydrogen chloride	NIOSH 7907	2 Quartz filters (R-100); 1 coated with sodium carbonate, 1 uncoated	225-9032	10
Hydrogen peroxide	OSHA 1019	2 **25-mm** Quartz filters (R-100); titanium oxysulfate hydrate **(in 25-mm cassette)**	225-9030 §	10
Isocyanates	ASTM Methods	1 PTFE filter; 1 Glass Fiber filter impregnated with MAMA (ISO-CHEK Sampling System, *see p. 111)*	225-9022 ‡ 225-9022A ‡	12 36
Isocyanates (HDI; 2,6-TDI; 2,4-TDI)	ASTM D5836 Δ OSHA 42	1 Glass Fiber filter and cellulose support; 1-(2-pyridyl)piperazine	225-9013 †§ 225-9002 §	10 10
Isocyanates, organic	MDHS 25/4 (UK)	1 **25-mm** A/E Glass Fiber filter; methoxyphenyl piperazine *(filters only, in jar)*	Special order §	
n-Isopropylaniline	OSHA 78	2 Glass Fiber filters; sulfuric acid	225-9004	10
Maleic anhydride	OSHA 86	2 Glass Fiber filters; veratrylamine	225-9021 †§	10
Maleic anhydride	For IFV	1 **25-mm** Glass Fiber filter; veratrylamine *(filters only, in jar)*	225-9028 §	10
Mercaptans (methyl-, ethyl-, n-butyl-, phenyl-)	NIOSH 2542 OSHA 26	1 Glass Fiber filter; mercuric acetate	225-9007 §	10
4,4'-Methylene bis (2-chloroaniline) (MOCA)	OSHA 71	2 Glass Fiber filters; sulfuric acid	225-9004	10
4,4'-Methylene bis (phenyl isocyanate) (MDI)	OSHA 47	1 Glass Fiber filter and cellulose support; 1-(2-pyridyl)piperazine	225-9013 †§ 225-9002 §	10 10
4,4'-Methylenedianiline	OSHA 57 NIOSH 5029	2 Glass Fiber filters; sulfuric acid	225-9004	10
1-Naphthylamine, 2-naphthylamine	OSHA 93	2 Glass Fiber filters; sulfuric acid	225-9004	10
Nitric acid	NIOSH 7907	2 Quartz filters (R-100); 1 coated with sodium carbonate, 1 uncoated	225-9032	10
Nitrobenzene	NIOSH 2017 ¥	2 Glass Fiber filters; sulfuric acid	225-9004 ¥	10
Ozone	OSHA ID-214	2 Glass Fiber filters; nitrite-impregnated	225-9014 §	10
Peracetic acid (PAA)	OSHA PV2321	1 **25-mm** Quartz filter (R-100); titanium oxysulfate hydrate **(in 25-mm cassette)**	225-9037 §•	10
Phenylenediamine (o-, m-, p-)	OSHA 87	2 Glass Fiber filters; sulfuric acid	225-9004	10
Phosphine	OSHA 1003	1 Glass Fiber filter; 1 polyester filter coated with mercuric chloride	225-9018 †§	10
Phosphoric acid	NIOSH 7908	1 Quartz filter (Tissuquartz)	225-9033	10
Phthalic anhydride	OSHA 90	2 Glass Fiber filters, veratrylamine	225-9034 †§	10
Sulfur dioxide	NIOSH 6004 (modified)	1 MCE pre-filter and support/1 cellulose filter and support; sodium carbonate	225-9005	10
Sulfuric acid	NIOSH 7908	1 Quartz filter (Tissuquartz)	225-9033	10
2,4-Toluenediamine	OSHA 65	2 Glass Fiber filters; sulfuric acid	225-9004	10
2,6-Toluenediamine	OSHA 65	2 Glass Fiber filters; sulfuric acid	225-9004	10
o-Tolidine	OSHA 71	2 Glass Fiber filters; sulfuric acid	225-9004	10
Toluene-2,4-diisocyanate and toluene-2,6-diisocyanate	For IFV	1 **25-mm** Glass Fiber filter; 1-(2-pyridyl)piperazine *(filters only, in jar)*	225-9035 †§	10
o-Toluidine	NIOSH 2017 ¥	2 Glass Fiber filters; sulfuric acid	225-9004 ¥	10
Toluidine (o-, m-, p-)	OSHA 73	2 Glass Fiber filters; sulfuric acid	225-9004	10
Trimellitic anhydride	OSHA 98	2 Glass Fiber filters; veratrylamine and di-n-octyl phthalate	225-9010 §	10
Valeraldehyde	OSHA 85	3 Glass Fiber filters; 2,4-dinitrophenylhydrazine and phosphoric acid	225-9020 §	10
m-Xylenediamine (m-XDA, p-XDA)	OSHA 105	2 Glass Fiber filters; sulfuric acid	225-9004	10

* *Coated filters have a limited shelf-life; contact SKC*
† *Made to order due to very limited shelf-life*
Δ *ASTM D5836 and D5932 for 2,4-TDI, 2,6-TDI only*
§ *Storage ≤ 39.2 F (4 C) required*
¥ *Also requires Sorbent Tube Cat. No. 226-15, see page 48*
\# *Collects both vapor and aerosol phases of fluorides*
• *Requires 22-ml threaded midget impinger and sorbent-containing trap. See method for more information.*
‡ *Limited shelf-life, storage ≤ 39.2 F (4 C) required; refrigerated shipping not required. Requires Cat. No. 225-9050; see p. 111.*

ISO-CHEK

Simultaneous and Separate Collection of Isocyanate Phases

- **Accurately samples diisocyanates: HDI, MDI, IPDI, 2,4-TDI, and 2,6-TDI**
- **Meets the specifications of several methods**
  - ASTM D5932 for 2,4 and 2,6-TDI
  - ASTM D6561 for HDI
  - ASTM D6562 for HDI
- **The only filter-based system that simultaneously traps and separates both monomers and oligomers**
  - For better determinations of control strategies
- **Decreases sample preparation and analysis time by 40% compared to other methods**
  - Premade calibration standards are available
- **Highly stable — low temperature storage and transport not required**
- **Highly sensitive analysis provides detection limits below current regulated exposure levels**
  - Ideal for occupational sampling and environmental surveys
  - Requires only a 15-minute sample time
- **Round-robin proficiency testing for ISO-CHEK labs ensures accurate, consistent analysis**
  - Visit skcinc.com/lab



Exploded view of ISO-CHEK Filter Cassette (Cassette in image is tinted for clarification.)

Calibration standards available!

Suitable for most isocyanates, the ISO-CHEK® Sampling System employs a two-stage filter arrangement that results in the simultaneous collection and separation of vapor from aerosol at the point of collection. The filter that collects the vapor phase is impregnated with 9-(N-methyl-aminomethyl) anthracene (MAMA), a highly stable reagent that minimizes storage and handling requirements.

Description	Cat. No.	Qty.
ISO-CHEK Sampling System with Derivatizing Reagent,†*‡ preloaded clear cassettes (not banded) and jars of Derivatizing Solution (MOPIP in toluene)	225-9023 225-9023A	4 10
ISO-CHEK Sampling Cassettes,** preloaded clear cassettes (not banded) for isocyanates, *require Derivatizing Solution; see below*	225-9022 225-9022A	12 36

Accessories	Cat. No.	Qty.
Derivatizing Solution,†*‡ 5 ml of MOPIP in toluene, in jars	225-9050	12
Jars, 37 mm with PTFE-lined cap	225-8377	36
Calibration Standard,‡ MAMA-HDI, 1 gram	225-9053	ea
Calibration Standard,‡ MAMA-IPDI, 1 gram	225-9054	ea
Calibration Standard,‡ MAMA-MDI, 1 gram	225-9062	ea
Calibration Standard,‡ MAMA-2,4-TDI and 2,6-TDI, 1 gram	225-9052	ea
Calibration Standard Set,‡ HDI, MDI, IPDI, 2,4-TDI, 2,6-TDI, 1 gram each	225-9055	ea
Packaging Kit, materials for shipping 10 packages of 10 samplers and jars	225-9059	ea

* *Limited shelf-life*
† *Hazmat shipping charges for air shipments only, ground shipments exempt*
‡ *Limited shelf-life, storage ≤ 39.2 F (4 C) required; refrigerated shipping not required*

ADVANTAGES

- ☑ **Simultaneous collection and separation of phases at the point of collection**
  Less time-consuming and more accurate analysis of each phase
- ☑ **Reagent is stable at room temperature.**
- ☑ **1 L/min flow rate efficiently captures aerosol phase isocyanates compared to denuder collectors.**
- ☑ **No handling precautions**
  Eliminates the inconveniences of impingers

ABOUT

ISO-CHEK Development
ISO-CHEK was developed and patented by IRSST (Institut de recherche Robert-Sauvé en santé et en sécurité du travail).

For ISO-CHEK analytical laboratories visit skcinc.com/lab

V Video P PowerPoint W Webinar S Sampling Solution
Visit skcinc.com

VersaTrap Spore Trap Cassette

Traps Smaller Mold Spores Using Higher Flows

ADVANTAGES

- ☑ **Uniform particle deposition** Provides for accurate analysis using standard equipment
- ☑ **High collection efficiency** Target specific size particles for true versatility. *See table below right for more information.*
- ☑ **SureSeal cassette for sample integrity**
- ☑ **Fast, easy alignment on microscope stage**

High collection efficiency from 5 to 30 L/min

- VersaTrap captures *Aspergillus* and *Penicillium* mold spores as small as 1.5 µm at 30 L/min

A standard collection method for mold spore count and genus identification

Easy analysis — ASTM Method D7391-20

- Positioning notches and flat edges provide for easy alignment on microscope stage
- Uniform, well-defined rectangular deposition

Optimized slide adhesive

- Optically clear and tested for superior adhesion

SureSeal leak-free cassettes for sample integrity

Unique serial number on each cassette for sample traceability

• TECH TIPS •

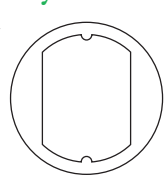
▶ VersaTrap cassettes can be operated at 30 L/min to trap the smallest *Penicillium/Aspergillus* spores that other spore traps do not. VersaTrap provides a 150-liter sample at 30 L/min in only 5 minutes.

VersaTrap® Spore Trap Cassettes provide the sampling versatility needed to capture mold spores and other particles ranging from 1.5 to 3.9 µm. Sampling is as easy as selecting the flow rate that will target the desired particle size *(see table below)*, setting and verifying pump flow rate, and collecting the sample.

VersaTrap Design

The narrow slit inlet focuses particles toward the clear glass slide coated with a sticky substrate that holds the sample securely. Targeted size particles are effectively held in a well-defined rectangular footprint. Each slide is encased in a SureSeal leak-free cassette to ensure sample integrity.

VersaTrap Makes Analysis Easy



- Designed for easy slide removal
- Positioning notches and flat edges for fast, easy alignment
- Well-defined rectangular footprint for accurate analysis using standard equipment
- Adhesive prevents blurring or wash off during staining
- Unique serial numbers for sample traceability

High Flows + Low Cut-points + No Particle Bounce =

High Collection Efficiency

Flow Rate (L/min)	VersaTrap 50% Cut-point (µm)
30	1.5
25	1.7
20	1.9
15	2.3
10	2.8
5	3.9

QuickTake 30 Pump Ideal for Spore Traps
(not CE/UKCA marked)
see pages 28-29

MORE INFORMATION
skcinc.com

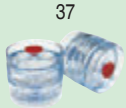
Description	Cat. No.	Qty.
VersaTrap Spore Trap Cassettes, 37 mm, not banded, *limited shelf-life*	225-9820	10
	225-9821	50

For a list of microbiological laboratories, go to skcinc.com/lab.

SureSeal Cassette Blanks

When SKC says "SureSeal" we mean that you can be sure that there is no sample bypass. SKC filters and supports fit tight to the cassette wall to ensure you collect the complete sample for analysis.*

Diameter (mm)	Description	Cat. No.	Qty.
25 	2 piece, standard; styrene, clear	**225-2-25LF** **225-2258LF**	**50** **250**
25 	3 piece, standard; styrene, clear	**225-3-25LF** **225-2259LF**	**50** **250**
25 	3 piece, goblet style; polypropylene, opaque white; solvent-resistant	**225-8585**	**50**
25 	2 piece, goblet; conductive black polypropylene	**225-2257**	**50**
25 	3 piece, 2-inch middle cowl; conductive black polypropylene	**225-3-23**	**50**
25 	3 piece, 1/2-inch middle ring; conductive black polypropylene	**225-329**	**50**

37 	2 piece, standard; styrene, clear	**225-2LF** **225-2050LF** **225-2250**	**10** **50** **250**
37 	3 piece, standard; styrene, clear	**225-3LF** **225-3050LF** **225-3250**	**10** **50** **250**
37 	Middle ring only; styrene, clear, 1/2 inch *Available in 25 mm as Cat. No. 225-300R; visit skcinc.com.*	**225-304**	**50**

Diameter (mm)	Description	Cat. No.	Qty.
37 	2 piece, standard; styrene, opaque brown	**225-4**	**50**
37 	3 piece, standard; styrene, opaque brown	**225-8451**	**50**
37	2 piece, standard; polypropylene, opaque white; solvent-resistant	**225-8483**	**50**
37	3 piece, standard; polypropylene, opaque white; solvent-resistant	**225-45** **225-45A**	**10** **50**
37 	2 piece, standard; conductive black polypropylene	**225-308**	**50**
37 	3 piece, standard; conductive black polypropylene ***Static free – ideal for cyclones!***	**225-309**	**50**

47 	2 piece, standard; conductive black polypropylene	**225-8496A**	**25**
47 	3 piece, standard; conductive black polypropylene	**225-8497A**	**25**

** References: https://doi.org/dgqwzc, https://doi.org/c83n3n, https://doi.org/crnf8b*

SureSeal Cassettes require the use of SureSeal Cassette Opener Cat. No. 225-13-5B on p. 117.

Best Practice

Minimize cassette wall losses while sampling with a cyclone. NIOSH suggests using a static-dissipative (conductive) black polypropylene filter cassette such as Cat. No. 225-309. *See Ashley, K., Harper, M., Journal of Occupational and Environmental Hygiene, 10:3, 2013, pp. D29-D33, https://doi.org/wv3.*

For additional cassette blanks, spacers, and accessories, visit skcinc.com!

Cassette and Filter Holders

SKC Filter Cassette Holder — Reinforced to Prevent Tube Kinking

The lightweight SKC Filter Cassette Holder attaches firmly to the collar for sampling in the breathing zone. Its special design securely holds a two or three-piece 37-mm cassette with or without cyclone, 25-mm cassette with cowl, or DPM Cassette with GS-1 Cyclone. The Filter Cassette Holder includes 3 feet of 1/4-inch ID Tygon tubing and a 25-mm adapter ring (cassette in photo **not** included).

Cat. No. 225-1

Specialty Filter Holders

13-mm Swinnex®

- 2-section polypropylene with silicone seal
- Reusable
- Autoclavable with filter in place
- Specified in NIOSH Method 5503 for PCBs

Cat. No. 225-32.....Qty/10

Replacement silicone gaskets
Cat. No. 225-3201.....Qty/100

25-mm Delrin® — Inline

- 2 section with inline stainless steel support
- Broad chemical compatibility and strength
- Useful for low pressure applications

Cat. No. 225-1109.....Qty/6

25-mm Delrin — Open-face

- Open-face with stainless steel support
- Lightweight and corrosion-resistant
- Includes ¼-inch ID hose barb adapter

Cat. No. 225-1107.....Qty/6

47-mm Polycarbonate

- Lightweight polycarbonate is ideal for air monitoring applications
- Opens and closes easily without disturbing the filter
- Autoclavable

Cat. No. 225-4702

47-mm Savillex PFA

- Includes ¼-inch ferrule nuts and wrench set
- Replace filters without disconnecting lines
- Operate within -328 to 500 F (-200 to 260 C)

Cat. No. 225-1712

47-mm Polypropylene

- Ideal for vacuum and pressure air sampling applications
- Can be used with pressures up to 100 psig

Cat. No. 225-1147

View more accessories at **skcinc.com!**

Filter Supports

Various materials are used to support filters during sampling. **Cellulose support pads** feature a smooth surface and uniform airflow distribution. **Porous plastic pads** are impervious to most solvents. Use **stainless steel screens** when cellulose or plastic will interfere with analysis.

Diameter (mm)	Support Material	Cat. No.	Qty.
25	Cellulose pad	225-28	100
25	Stainless steel screen, wide mesh	225-2625	ea
25	Porous plastic (polyethylene)	225-2901	100
37	Cellulose pad	225-27 225-2700	100 500
37	Cellulose spacer ring	225-23A	100
37	Porous plastic (polyethylene)	225-2902	100
37	Stainless steel screen, wide mesh	225-26	ea
37	Stainless steel screen, fine mesh	225-2637	ea
47	Cellulose pad	225-2903	100
47	Stainless steel screen, wide mesh	225-2647W	ea

For Cassette Blanks
see page 113

Cassette Shrink Bands

Specifically designed for use with sampling cassettes, SKC Cassette Shrink Bands are self-sealing, provide a smooth writing surface for sample identification, and make tampering evident.

				Quantity Pricing	
Fit Cassette Diameter (mm)	Color	Cat. No.	Qty.	Cat. No.	Qty.
25	White	225-2503	100	225-2503A	1400
25	Clear	Contact SKC	100	225-2510	1400
37	White	225-25	100	225-25A	1000
37	Clear	225-2509	100	225-2509A	1000
37	Orange	225-2504	100	225-2504A	1000
37 *(25 mm also available!)*	Yellow	225-2507	100	225-2507A	1000
37	Red	225-2508	100	225-2508A	1000
37	Black	Contact SKC	100	225-2515A	1000

Tubing for Connecting Pump and Media

Description/Applications	ID in (mm)	OD in (mm)	Cat. No.	Length in Feet
Tygon, sampling trains	3/16 (4.76)	5/16 (7.94)	225-1346	10
Tygon, sampling trains; fits over impinger sidearm, impinger inlet, filter cassette outlet, or Luer adapter	1/4 (6.35)	3/8 (9.53)	225-13-4A 225-13-4 225-1345	3.3 10 50
Tygon, for calibrating DCS/DPS	5/16 (7.94)	9/16 (14.29)	225-1349	10
Tygon, fits higher flow rate pumps and flowmeters with larger diameter inlets	3/8 (9.53)	1/2 (12.7)	225-1351 225-1352	10 50
Latex Rubber, black, sampling trains	3/16 (4.76)	5/16 (7.94)	226-03-003	12
Latex Rubber, black, sampling trains; fits over impinger sidearm, impinger inlet, filter cassette outlet, or Luer adapter	1/4 (6.35)	3/8 (9.53)	226-03-004	12
Latex Rubber, amber, sampling trains; fits over impinger sidearm, impinger inlet, filter cassette outlet, or Luer adapter	1/4 (6.35)	3/8 (9.53)	225-1347	10
Polyurethane, reinforced to prevent kinking, sampling trains; fits over impinger sidearm, impinger inlet, filter cassette outlet, or Luer adapter	1/4 (6.35)	15/32 (11.9)	225-1350A 225-1350	3.3 10
Spring Tubing Supports, use with 5/16-inch OD flexible tubing to prevent kinking			225-1348	Qty/5

• TECH TIPS •

- Consider your application before selecting tubing.
  - **Tubing attached to the sampling media outlet** does **not** contact the sample; therefore, the tubing material used is not critical, but should not be prone to kinking. Select the tubing best suited for the media and pump.
  - **Tubing attached to the sampling media inlet for gas/vapor sampling** contacts the sample during specialized applications such as bag sampling. Inert PTFE tubing is recommended because it prevents adsorption of the sample on the tubing's inner surface.
  - **Tubing attached to the sampling media inlet for particulate sampling** contacts the sample during specialized applications such as microvacuum sampling. Tygon tubing is typically used to prevent sample loss in the tubing due to static effect.

Sampling and Flow Rate Verification

SKC Filter Cassette Holder

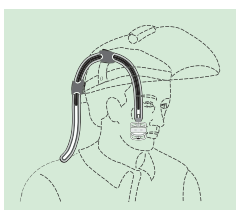
The lightweight SKC Filter Cassette Holder attaches firmly to the collar for sampling in the breathing zone. Its special design securely holds a two or three-piece 37-mm cassette with or without cyclone, 25-mm cassette with cowl, or DPM Cassette with GS-1 Cyclone. The Filter Cassette Holder includes 3 feet of 1/4-inch ID Tygon tubing and a 25-mm adapter ring (cassette in photo **not** included).

Cat. No. 225-1

Helmet Adapter*

Ideal for welders or workers who wear a helmet with face shield; effectively holds a filter cassette or sample tube in the breathing zone regardless of visor position

Cat. No. 225-600



* *Developed in Canada by IRSST (Institut de recherche Robert-Sauvé en santé et en sécurité du travail)*

Cassette Adapters

PVC Luer taper adapters connect a cassette to 1/4-inch ID tubing.

Cat. No. 225-13-2.....Qty/10
Cat. No. 225-132A Qty/250

Nickel-plated Brass
Cat. No. 225-13-3.....Qty/10

Sampling Labels

Identify samples with sample number, date, flow rate, pump number, time on, and time off.

Cat. No. 225-1370.....Qty/500

Tubing, Collar Clip, and Cable Tie

For attachment of a sampling cassette to the collar; includes 3 feet of 1/4-inch ID Tygon tubing and one alligator clip attached to a nylon cable tie

Cat. No. 225-13-8

Collar Clip and Cable Ties Only
Cat. No. 225-13-6.....Qty/10
Cat. No. 225-13-6A.....Qty/25

Calibration Adapters

Use the guide below to find the adapter or jar required for flow rate verification.

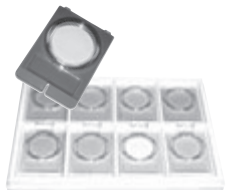
For SKC sampler	You need
Disposable PPIs	**Disposable PPI Calibration Adapter** **Cat. No. 225-389** 
Reusable PPIs GS Cyclones Low-volume PUF Tubes	**Calibration Jar, Standard** **Cat. No. 225-111** 
Devices up to 8-inch length x 3.25-inch diameter	**Calibration Jar, Large** **Cat. No. 225-112** 
Aluminum Cyclones (25 and 37 mm)	**Aluminum Cyclone Calibration Adapter** **Cat. No. 225-01-03** 
Button Sampler IFV Pro Sampler	**Button Sampler/IFV Pro Sampler Calibration Adapter** **Cat. No. 225-361** 

For SKC sampler	You need
IMPACT Sampler	**IMPACT Sampler Calibration Adapter** **Cat. No. 225-394** 
IOM Sampler	**IOM Calibration Adapter** **Cat. No. 391-01** 
PEM Sampler	**PEM Calibration Adapter** **Cat. No. 761-202** 
PMI Sampler	**PMI Calibration Adapter** **Cat. No. 225-358** 
BioStage Impactor	**BioStage Calibration Adapter for BioStage** **Cat. No. P33100** 

Handling, Transporting, and Storing

Filter-Keeper Filter Transport and Storage

Minimize sample loss with static-dissipative plastic Filter-Keepers. The clamshell design locks the periphery of filters into place away from any surface. Eight Filter-Keepers can be kept in a numbered Filter-Keeper Archiving Tray that contains an area for labeling.



Description	Cat. No.	Qty.
25-mm Filter-Keepers include labels	225-8301	100
37-mm Filter-Keepers include labels	225-8303	100
	225-8303A	10
Archiving Trays Only	225-8305	6

Kasset-Kaddy

Newly redesigned Kasset-Kaddy trays securely hold twenty-five 37-mm cassettes for transport or storage. The lightweight, durable 10 x 10-inch trays fit commercially available desiccators and ovens.

Need a Kasset-Kaddy for 25-mm cassettes or in a specific color? Contact SKC.

Cat. No. 225-8321..... Qty/2

Stainless Steel Filter Lifter

Speeds removal of filters from cassettes without damage

Cat. No. 225-13-7

Petri Dish Slides

Easily transport filters up to 47 mm in diameter with Petri Dish Slides. The rectangular base fits most microscope stages.

Cat. No. 225-2-01..... Qty/100

SureSeal Cassette Opener

NEW DESIGN!

The redesigned SKC SureSeal Cassette Opener is a sturdy metal crowbar-style opener with extended handle for easy opening of 25, 37, and 47-mm compressed filter cassettes (includes built-in tube breaker). *Required for all SureSeal Cassettes*

Cat. No. 225-13-5B

Mini Sampler for Welding Aerosols

The Mini Sampler makes sampling inhalable manganese and other hazardous metals in welding fume easy! The Mini Sampler's open-face aluminum entry nozzle cassette fits onto the Face Level Sampling Headset that features the headband behind the neck, making it an easy, comfortable fit under a welding helmet or other PPE. Validated for sampling manganese, the Mini Sampler and the Headset are identified in ISO 10882-1:2011 as the best mounting arrangement for sampling particulates (metals) in the breathing zone inside a welder's face mask. *Requires a 13-mm filter (see pages 100 and 108) and sample pump (see pages 12-23)*

Mini SamplerΔ with tubing
Cat. No. 225-6201

Face Level Sampling HeadsetΔ, with 2 flexible arms and 4 hose/Luer adapter fittings
Cat. No. 225-6200

Tube Holder/Cover for Use with Face Level Headset*
Fits a single 6-mm OD x 70-mm L sorbent tube
Cat. No. 225-6220

Calibration Adapter with tubing for Mini Sampler
Cat. No. 225-6202

* *Contact SKC for more information*

Δ *Developed in a research project partly funded by the Swedish Work Environment Authority at Stockholm University, Sweden*

Reference

Liden, G. and Surakka, J., "A Headset-Mounted Mini Sampler for Measuring Exposure to Welding Aerosol in the Breathing Zone," Ann. Occup Hyg., Vol. 53, no. 2, 2009, pp. 99-116

Filter Handling Kit

Includes SureSeal Cassette Opener, filter lifter, and non-serrated flat-tip forceps in a convenient carry case

Cat. No. 225-8372

Glass Jars

Sturdy 37-mm glass jars with PTFE-lined caps are ideal for transport and solvent extraction of filter samples in the field or the lab.

Cat. No. 225-8377..... Qty/36

Filter Transport Case

Conductive plastic case securely holds 25-mm filters for transport.

Cat. No. 225-67

Forceps

NEW DESIGN!

Non-serrated flat tips for delicate membranes

Cat. No. 225-8371

Serrated pointed tips

Cat. No. 225-13-1

PTFE-coated pointed tips to avoid contaminants when sampling for hexavalent chromium

Cat. No. 225-1344

The SKC Particle Size-

Use this convenient guide to help select

Select a 50% Cut-point or Classification	< 1 µm	< 0.25 to > 2.5 µm	2.5 µm					4 µm				
	Sub-micron	Ultrafine, Fine, and > PM2.5	PM2.5					Respirable				
Select a Flow Rate (L/min)	1.7 or 2	9	2	3	4	10	10	2	2.5	2.75	3	4 and 8
SKC Size-selective Samplers	DPM Cassette	Sioutas Impactor	PEM	PMI	PEM	IMPACT	PEM	PPI	Aluminum Cyclone	GS-3 Cyclone	Plastic Cyclone	PPI
Main Feature/ Benefit	Ideal for DPM and nano-particles	Samples ultrafine, fine, and > PM2.5 particles simultaneously	Referenced in EPA IP-10A	Easy to operate; disposable collection substrate	Referenced in EPA IP-10A	Easy to operate; disposable collection substrate	Referenced in EPA IP-10A	Precisely matches ISO 7708/CEN criteria	Specified in NIOSH 7500 and 0600	Meets ISO 7708/CEN criteria	For MDHS 14/4, 101/2, and 91/2 Meets ISO/ CEN	High flow for enhanced sensitivity
Page	107	132	130	131	130	129	130	126-128	125	124	124	126-128

DPM Cassette
Diesel Particulate Matter
Page 107

IMPACT Sampler
PM2.5/PM10/Coarse
Page 129

Sioutas Personal Cascade Impactor
Ultrafine/Fine/ > PM2.5
Page 132

Personal Modular Impactor (PMI)
PM2.5/PM10/Coarse
Page 131

Disposable Parallel Particle Impactor (PPI)
Respirable and Thoracic
Pages 126-127

Reusable Parallel Particle Impactor (PPI)
Respirable and Thoracic
Page 128

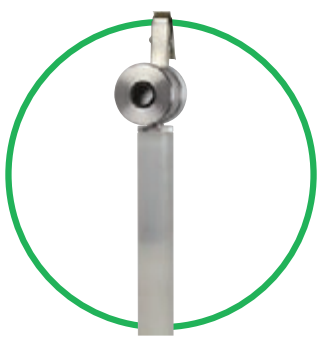
selective Sampler Guide

sampling devices to meet your applications.

Select a 50% Cut-point or Classification	Particles < 10 µm but > 2.5 µm	10 µm	100 µm
	PM Coarse	Thoracic or PM10	Inhalable

Select a Flow Rate (L/min)	3	10	2	2	3	4	10	10	1	2	4
SKC Size-selective Samplers	PMI	IMPACT	PPI	PEM	PMI	PEM	PEM	IMPACT	IFV Pro	IOM	Button Sampler
Main Feature/ Benefit	Easy to operate; disposable collection substrate	Easy to operate; disposable collection substrate	Precisely matches ISO 7708/CEN criteria	Referenced in EPA IP-10A	Easy to operate; disposable collection substrate	Referenced in EPA IP-10A	Referenced in EPA IP-10A	High flow for increased sensitivity	Simultaneous sampling of mixed-phase (aerosol and vapor)	Meets US and international standards	Low-level PM sampling
Page	131	129	126-128	130	131	130	130	129	123	120-121	122

Aluminum and Plastic Respirable Cyclones
Page 125



IFV Pro Inhalable Sampler Mixed-phase
Page 123

GS-3 Cyclone Respirable
Page 124

For sample pumps
see pages 12-25

IOM Sampler Inhalable
Pages 120-121

Button Sampler Inhalable
Page 122

Personal Environmental Monitor (PEM) PM2.5/PM10
Page 130

For real-time particulate monitors
see pages 152-159

IOM Sampler

A Gold Standard for Personal Inhalable PM Sampling

Choose the Original IOM for OPTIMAL PERFORMANCE!

APPLICATIONS

Special High Flow Use

Demand grows for higher flow inhalable sampling devices to evaluate very low levels of unique target compounds. Several studies identify alternative applications for the IOM Sampler at flows from 8.2 to 10.64 L/min while still meeting the ISO 7708 criteria. See the related Technical Note: Higher Flow Rates Expand Applications for the IOM Sampler at skcinc.com.

SKC recommends use of the QuickTake 30 Air Sampling Pump (not CE/UKCA marked) for these high flow applications. See pump details on pages 28-29 or visit skcinc.com.

Meets US and international standards

- ACGIH sampling criteria for inhalable particulate
- ISO/CEN health-related fractions of bioaerosols
- Preferred sampler for HSE Method MDHS 14/4
- Included in multiple other MDHS methods for inhalable particulate sampling
- NIOSH Method 5700 for particulate formaldehyde
- Australian standard for inhalable particulate
- OSHA-equivalent method for particulates not otherwise regulated (PNOR)‡

Small and lightweight

- Plastic model weighs less than 2 ounces (55 grams)

Maintains sample integrity

- Removable 25-mm cassette system eliminates filter handling
- Cassette with filter is weighed as a single unit to include all collected particles in analysis

Stainless steel cassette available for chemical analysis

- Autoclavable for bioaerosol sampling

Use with MultiDust Foam Discs for simultaneous inhalable and respirable dust

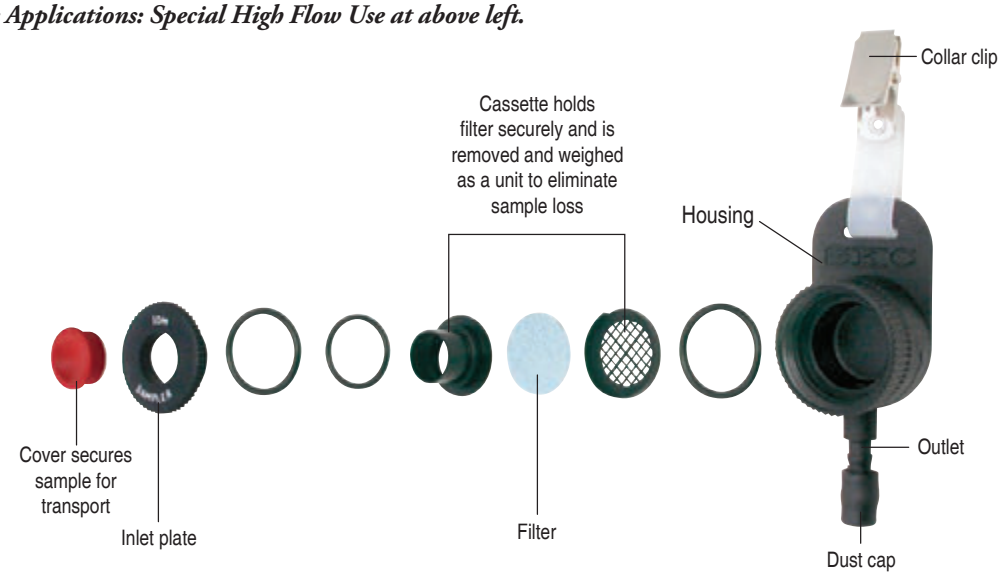
- Determine respirable dust only by weighing the filter only

Sample Time:	*Varies*
Sample Rate:	*2 L/min; see Applications at left*
Sample Pump:	*Universal or AirChek Series*
Sample Media:	*25-mm filters; see list on p. 121*
Tubing:	*1/4-inch ID*

‡ *Reference: OSHA letter November 8, 2011; contact SKC for a copy*

The authentic IOM Sampler, developed by the Institute of Occupational Medicine (IOM) in Scotland and referenced in UK and other national sampling methods, has been widely studied and is well recognized for following the inhalable fraction criteria in the ISO/CEN convention (ISO 7708).* The IOM Sampler houses a reusable 25-mm filter cassette that holds a method-specified filter for collection of inhalable particles. Operated with a 2 L/min personal sample pump, IOM is clipped near a worker's breathing zone and effectively traps particles up to 100 µm in aerodynamic diameter. **This method closely simulates the inhalation of particles through the nose and mouth.** The plastic cassette with filter is weighed as a single unit before and after sampling for gravimetric analysis. A stainless steel IOM cassette can be used for chemical analyses and bioaerosol sampling. Some higher flow applications for the IOM have been studied. ***See Applications: Special High Flow Use at above left.***

* *Kenny L.C., et al., "A Collaborative European Study of Personal Inhalable Aerosol Sampler Performance," Ann. Occup. Hyg., Vol. 4, No. 2, 1997, pp. 135-153, https://doi.org/ccgxqz*



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IOM Sampler

Professionals Choose the Authentic IOM

The original IOM Sampler can provide samples for the same measured dust concentration and aerodynamic size distribution as that inhaled by the worker. IOM is widely accepted as one of the most effective inhalable particulate samplers available.

Description	Cat. No.	Qty.
IOM Sampler and cassette,† in conductive plastic, with transport clip and cover	225-70A	ea
IOM Sampler and cassette,† in stainless steel, with transport clip and cover	225-76A	ea
IOM Sampler,† in conductive plastic, with stainless steel cassette, transport clip, and cover	225-79A	ea

† *A 25-mm filter is required for sampling with the IOM; see below.*

25-mm Filters for IOM Sampler

The IOM Sampler requires a 25-mm filter for sampling. Select from the filters below to meet your application.

Description	Cat. No.	Qty.
PVC, 5.0 µm, 25 mm	225-5-25	100
Glass Fiber, 25 mm	225-702	500
MCE, 0.8 µm, 25 mm	225-1930	100
Polycarbonate, 0.8 µm, 25 mm	225-1601	100
Gelatin, sterilized, 25 mm	225-9551	50

MultiDust Foam Discs

MultiDust Foam Discs were developed by the UK Health and Safety Executive (HSE) to simultaneously collect inhalable and respirable particulate fractions and determine them by weighing the dust collected on the foam disc and final filter. ***For respirable dust only,*** *weigh the filter only. A 25-mm filter is required for sampling with the IOM; see above.*

Description	Cat. No.	Qty.
MultiDust Foam Discs with certificate of conformity to ISO 7708 respirable dust criteria	225-772	10
	225-772-50	50

Accessories

Description		Cat. No.	Qty.
Cassette assembly, in conductive plastic, with transport clip and cover, ideal for gravimetric determinations		225-71A	ea
Cassette assembly, in stainless steel, with transport clip and cover, ideal for chemical analysis and bioaerosol sampling		225-75A	ea
Transport Clip and Cover		225-72A	ea
IOM Calibration Adapter		391-01	ea
Sampling Heads			
Seven Hole Head, *see at right*		225-50	ea
Asbestos Head, 25 mm cowled sampler designed for use with a gridded filter as per HSG (UK) 248 for asbestos fibers; suitable for other methods, *see the HSE Sampling Guide on pages 174-186*			
	Aluminum Cowl	225-54A	ea
	Plastic Cowl	225-54	ea

• TECH TIPS •

- For simultaneous respirable and inhalable sampling, use a plastic IOM, PVC filter, and MultiDust foam disc *(see below left)*. The plastic IOM's low tare weight is ideal for gravimetric determinations.
- For bioaerosol sampling, use the autoclavable stainless steel IOM and cassette with a polycarbonate filter and MultiDust foam disc. MultiDust fractionates the sample and better maintains microorganism survivability. *See left.*

IOM Sampler with MultiDust Foam Disc inserted

IOM Sampler with Seven Hole Head

MORE INFORMATION
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Button Aerosol Sampler

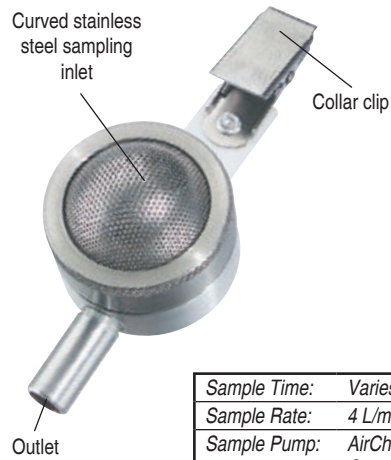
Chemical or Biological Inhalable PM Sampling

• TECH TIPS •

Sampling Bioaerosols with the Button Sampler

▶ For growth cultures, use the Button Sampler with a sterile gelatin membrane filter to help maintain microorganism viability. *See below right.*

- 4 L/min flow rate enhances sensitivity for low exposure limits
- Closely follows the ACGIH/ISO sampling criteria for inhalable particulate mass
- Inlet design reduces oversampling of very large particles and sensitivity to wind direction/velocity
- Suitable for area or personal sampling
- Aluminum construction with stainless steel inlet reduces electrostatic effects
- Suitable for collecting bioaerosols for viable or non-viable analysis
  - Autoclavable



Sample Time:	*Varies*
Sample Rate:	*4 L/min optimum*
Sample Pump:	*AirChek TOUCH, Connect, Essential+, or XR5000*
Sample Media:	*25-mm filters*
Tubing:	*1/4-inch ID*

Recommended Pumps for Button Sampler
see pages 16-21

The reusable SKC Button Aerosol Sampler features a porous curved-surface inlet designed to improve the collection characteristics of inhalable dust (< 100-µm aerodynamic diameter), including bioaerosols for viable or non-viable analysis. The conductive stainless steel inlet contains evenly spaced holes that act as sampling orifices for multi-directional sampling and low sensitivity to wind direction and velocity. The proximity of the filter to the inlet minimizes transmission losses and provides for equal distribution of particle loading and low intersample variation. The Button Sampler follows closely the ACGIH/ISO sampling criteria for inhalable particulate mass at 4 L/min. A convenient conductive plastic transport case is available for shipping samples to a laboratory for analysis.

Filter Transport Case
Cat. No. 225-67

Description		Cat. No.	Qty.
Button Sampler, *requires a 25-mm filter; see below*		**225-360**	**ea**
Button Sampler Pump Kit includes Button Sampler, standard AirChek XR5000 Sample Pump, single charger, 3 feet of Tygon tubing, and calibration adapter, *requires a 25-mm filter; see below*	**100-240 V**	**210-4121**	**ea**
Accessories			
Button Sampler Calibration Adapter		**225-361**	**ea**
Filter Transport Case, for 25-mm filters, conductive plastic		**225-67**	**ea**

Recommended 25-mm Filters for Button Sampler

The Button Sampler requires a 25-mm filter for sampling. SKC recommends pore sizes greater than 1 micron to lower back pressure and enhance sample time with personal sample pumps. Select from the filters below to meet your application.

Description	Cat. No.	Qty.
PVC, 5.0 µm, 25 mm	**225-5-25**	**100**
Glass Fiber, 25 mm	**225-702**	**500**
MCE, 1.2 µm, 25 mm	**225-1912**	**100**
PTFE,† 3.0 µm, 25 mm	**225-1711**	**50**
Gelatin, sterilized, 25 mm	**225-9551**	**50**

† *Back pressure on PTFE filters can vary within the same lot.*

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SKC IFV Pro Sampler

Designed for ACGIH TLVs with IFV Designation

- **True inhalable fraction and vapor sampling simultaneously**
  - Collects aerosol phase on a 25-mm filter using IOM-style inlet
  - Collects vapor in an 8 x 110-mm sorbent tube
- **Uses standard sorbent tubes following published methods for designated compounds**
- **Recommended 1 L/min flow rate allows for effective collection of both contaminant phases**
- **Meets European Standard 13936 by collecting the total of vapor and aerosol exposures**

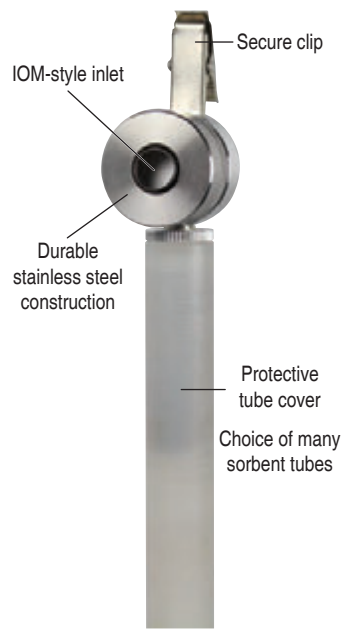
Sampling mixed-phase contaminants such as pesticides, polyaromatic hydrocarbons (PAHs), inorganic acids, and explosives is challenging because these compounds exert sufficient vapor pressure such that the compound may be present in both particulate and vapor phases with each contributing to the overall concentration.

The IFV Pro Sampler features an IOM-style inlet for true inhalable sampling and collects vapor phase on a variety of method-specified sorbents.

ABOUT

ACGIH IFV Designation

ACGIH has assigned a TLV with Inhalable Fraction and Vapor (IFV) designation to over 50 compounds that exert sufficient vapor pressure such that the contaminant may be present in both particle and vapor phases, with each phase contributing a significant portion of the dose. *See compounds in table at below left.*



IFV Pro Sampler

IFV Pro Filter and Sorbent Tube Selection Guide

Compound	Recommended Filter*	Sorbent Tube†
Acrylamide	225-702	226-10-04
Alachlor	225-702	226-30-06
Aldrin	225-702	226-30-06
Azinphos-methyl	225-702	226-30-06
Butylated hydroxytoluene	225-702	226-211
Carbaryl	225-702	226-30-06
Carbofuran	225-702	226-30-06
Chlorpyrifos	225-702	226-30-06
Clopidol	225-702	226-30-06
Coumaphos	225-702	226-30-06
Cresol, all isomers	225-702	226-211
Demeton	225-702	226-30-06
Demeton S-methyl	225-702	226-30-06
Diazinon	225-702	226-30-06
Dibutyl phosphate	225-702	226-30-06
Dichlorvos	225-702	226-30-06
Dicrotophos	225-702	226-30-06
Dieldrin	225-702	226-30-06
Diesel fuel as total hydrocarbons	225-702	226-09
Diethanolamine	225-702	226-214
Dioxathion	225-702	226-30-06
Disulfoton	225-702	226-30-06
Endosulfan	225-702	226-30-06
2-Ethylhexanoic acid	225-702	226-10-04
Fenamiphos	225-702	226-30-06
Fensulfothion	225-702	226-30-06
Fenthion	225-702	226-30-06
Fonofos	225-702	226-30-06
Glyoxal	225-9036	226-119-7
Malathion	225-702	226-30-06
Maleic anhydride	225-9028	226-213
Methomyl	225-702	226-30-06
Methyl demeton	225-702	226-30-06
Methyl parathion	225-702	226-30-06
Mevinphos	225-702	226-30-06
Monochloroacetic acid	225-702	226-10-04
Monocrotophos	225-702	226-30-06
Naled	225-702	226-30-06
o-Phthalodinitrile	225-702	226-83
Parathion	225-702	226-30-06
Pentachlorophenol	225-702	226-211
Phorate	225-702	226-30-06
Propoxur	225-702	226-30-06
Ronnel	225-702	226-30-06
Sulfotepp	225-702	226-30-06
Sulprofos	225-702	226-30-06
Temephos	225-702	226-30-06
Terbufos	225-702	226-30-06
1,1,2,2-Tetrabromoethane	225-702	226-10-04
Tetraethylpyrophosphate (TEPP)	225-702	226-106A
Thiram	225-702	226-30-06
Toluene-2,4-diisocyanate	225-9035	—
Toluene-2,6-diisocyanate	225-9035	—
Xylidene isomers	225-702	226-10-04

** Filter details on pp. 108 and 110* *† Sorbent tube details on pp. 48-52*

Description	Cat. No.	Qty.
IFV Pro Sampler Kit includes sampling head (aerosol sampler body, cassette, and front plate), protective tube cover, calibration adapter, cassette cap, cassette transport container, 10 extra tube holders (rubber sleeves), and case; *requires 25-mm filter and sorbent tube, see table above*	**225-49K**	**ea**
Tube Holders (Rubber Sleeves), *change after each sample*	**P3022A**	**25**
IFV Pro Cassette Transport Vial	**225-4901**	**ea**

For Sample Pumps
see pages 16-19

• TECH TIPS •

▶Traditionally, respirable dust sampling with a cyclone has been performed using a clear styrene cassette. NIOSH now suggests that conductive black polypropylene cassettes are a better option for this application to minimize cassette wall losses (*Journal of Occ. and Env. Hygiene, 10:3, 2013, pp. D29-D33, https://doi.org/wv3*). For conductive black polypropylene cassettes, *see page 113.*

GS Cyclones Accessories/ Replacement Parts

Replacement Cassette Adapters for GS-3 only **Cat. No. 225-102**.....37 mm **Cat. No. 225-101**.....25 mm
Filter Cassette/Cyclone Holder, *see p. 116 for details* **Cat. No. 225-1**
Standard-size Multi-purpose Calibration Jar, *see p. 116 for details* **Cat. No. 225-111**
Replacement Grit Pots **Cat. No. P225012**..... **Qty/25**

GS-1 Respirable Dust Cyclone

- Use at 1.7 or 2.0 L/min with DPM Cassette for MSHA compliance DPM sampling
- Conductive plastic to eliminate electrostatic effects
- Not a spark hazard in underground mines

Use this lightweight 10-mm equivalent to the 10-mm Nylon Cyclone without static concerns. Requires a 37-mm three-piece filter cassette or the SKC DPM Cassette (*see page 107*).

Cat. No. 225-105

GS-3 Respirable Dust Cyclone

Meets ISO 7708/CEN Criteria

Operates at 2.75 L/min to conform to the ISO 7708/CEN criteria
- Meets OSHA criteria
- Suitable for ACGIH respirable TLVs
- Higher flow rate increases sensitivity for lower concentrations

Unique design overcomes disadvantages of 10-mm nylon cyclone
- Multiple inlets eliminate ambient wind speed and orientation effects

Conductive plastic eliminates electrostatic effects
- Not a spark hazard for underground mine use

Sample Time:	*Varies*
Sample Rate:	*2.75 L/min for 4-µm cut-point* (meets OSHA Silica Rule)*
Sample Pump:	*Universal or AirChek Series*
Sample Media:	*25 or 37-mm filters in 3-piece cassettes*
Tubing:	*1/4-inch ID*

Use the lightweight 10-mm GS-3 Cyclone with a 25 or 37-mm three-piece filter cassette. *See Tech Tips at above left.*

Description		Cat. No.	Qty.
GS-3 Cyclone with bowl adapter, cassette adapter, and grit pot	**37 mm**	**225-100**	**ea**
	25 mm	**225-103**	**ea**

* *Calibrated at UK Health and Safety Laboratory; visit www.skcinc.com/products/gs-3-conductive-plastic-respirable-dust-cyclone-37-mm to view the collection efficiency curve*

Plastic Cyclone

Meets ISO 7708/BS EN 481 Criteria

Designed to sample respirable dust as per MDHS 14/4 and meets ISO 7708/BS EN 481 criteria

Use at 3.0 L/min
- Designed for a 50% cut-point of 4.0 µm when used at 3.0 L/min

Available with 25 or 37-mm cassettes

The SKC Plastic Cyclone is a lightweight conductive plastic unit that holds a collection filter in a reusable cassette during sampling. The static-dissipating cyclone features a snap-together cassette system. When attached to a sample pump, the respirable particles are collected on the filter while larger particles fall into the grit pot at the base to be discarded. It is designed for a 50% cut-point of 4.0 µm when used at at 3.0 L/min. The 25-mm SKC Plastic Cyclone is similar to the the Higgins-Dewell cyclone (2.2 L/min) but operates at 3.0 L/min. The Plastic Cyclone is also suitable for UK methods MDHS 101/2 and 91/2.

Description		Cat. No.	Qty.
Plastic Cyclone with plastic cassette and grit pot	**25mm**	**225-69**	**ea**
	37mm	**225-69-37**	**ea**

Accessories	Cat. No.	Qty.
Cyclone Cassette, 25mm, for use with Cat. No. 225-69	**225-62**	**ea**
Cyclone Cassette, 37mm, for use with Cat. No. 225-69-37	**225-62-37**	**ea**
Rubber Grit Pots	**225-64**	**10**
Replacement O-rings for Plastic Cyclone	**P22569**	**Set of 3**

Respirable Dust Aluminum Cyclone

Listed in OSHA Silica Rule and NIOSH Methods

- **Operates at 2.5 L/min to conform to the ISO 7708/CEN criteria**
  - Meets requirements in the OSHA Silica Rule
  - Suitable for ACGIH respirable TLVs
- **Specified in NIOSH Method 7500 for silica and NIOSH 0600 for respirable particulates**
- **Eliminates adverse electrostatic effects**
- **Small and lightweight**
  - 2.6 x 1.5 inches (6.6 x 3.8 cm)
- **Used with an open-face three-piece cassette for more even particle deposition on the filter**
  - Available in 25 or 37 mm
  - Inserts into middle ring of cassette

Sample Time:	*Varies*
Sample Rate:	*2.5 L/min for 4-µm cut-point (meets OSHA Silica Rule)*
Sample Pump:	*Universal or AirChek Series*
Sample Media:	*25 or 37-mm filters in 3-piece cassettes*
Tubing:	*1/4-inch ID*

The SKC Aluminum Cyclone is a lightweight respirable dust sampler that is placed into the middle ring of a three-piece cassette loaded with the appropriate filter. When attached to a sample pump, respirable particles collect on the filter and larger particles fall into the grit pot to be discarded. Available in 25 or 37 mm, the SKC Aluminum Cyclone provides sharp size selection of the respirable fraction. The SKC Aluminum Cyclone eliminates the electrostatic problems associated with nylon (non-conductive) cyclones and allows the cyclone to sample particles more efficiently. *See Tech Tips at right.*

ACGIH, NIOSH, the European Standard Committee (CEN), and the OSHA Silica Rule specify a respirable collection efficiency curve with a median cut-point of 4 µm. A leading aerosol research organization calibrated the SKC Aluminum Cyclone. Results showed that using the cyclone at a flow rate of 2.5 L/min provided the optimum match to the ISO 7708/CEN respirable criteria. *The publication is available at https://bit.ly/3Nz6X6M.*

Easy-to-use Calibration Adapter

The aluminum calibration adapter fits both the 25 and 37-mm Aluminum Cyclones and allows standard 1/4-inch ID Tygon tubing to be attached for simple flow rate verification.

Cat. No. 225-01-03

Description		Cat. No.	Qty.
Cyclone‡ with grit pot	25 mm	225-01-01	ea
	37 mm	225-01-02	ea
Accessories			
Calibration Adapter, 25/37 mm		225-01-03	ea
Filter Cassette Holder, 25/37 mm		225-1	ea
Replacement Grit Pots		P225013	25
Replacement O-rings, for 37-mm cyclones		P22501	5

‡ *Three-piece cassettes are required for use with SKC Aluminum Cyclones; see filter cassettes on pages 100-110.*

• TECH TIPS •

- A cyclone will not sample optimally if it is influenced by electrostatic charge. SKC cyclones are constructed of conductive plastic or aluminum that eliminates the static problem associated with non-conductive nylon cyclones.
- Cleaning cyclones before sampling prevents deviation in the collection efficiency curve.
- The cyclone grit pot must be in place during sampling for size selection to occur. Do not remove the grit pot during flow rate verification and sampling.
- When verifying the flow rate of a size-selective sampler, such as a cyclone connected to a sampling pump, use the sampler's calibration adapter. If an adapter does not exist, use the multi-purpose calibration jar with the smallest volume. *See page 116.*

For the SM-7204 Direct-reading Silica Monitor
see page 155

Looking for Laboratories for Silica Analysis?
visit skcinc.com/lab

PPI ADVANTAGES

- **Small, less obtrusive for worker**

- **Convenient calibration adapter** — no calibration jar needed!

- **No tipping hazard!** Invert PPI without causing large particles to invalidate the filter sample.

SCAN ME

Disposable Parallel Particle Impactors (PPIs)

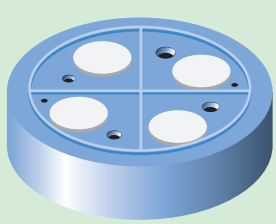
The Original from SKC — Listed in the OSHA Silica Rule

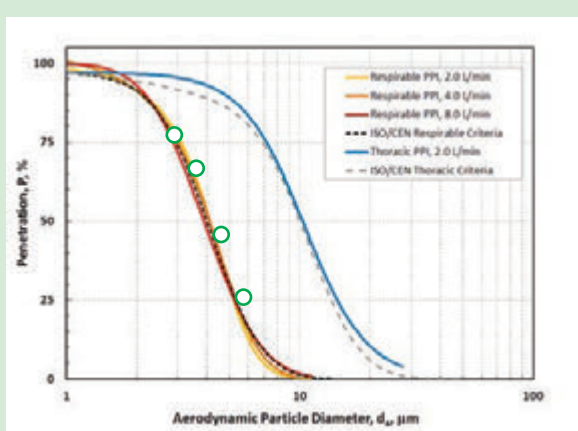
- **Collection efficiency precisely matches ISO 7708/CEN criteria adopted in the OSHA Final Silica Rule and NIOSH respirable dust methods**
- **Respirable models available in three flow rates for your applications**
  - **2 and 4 L/min models** for TWA sampling
  - **8 L/min model** for shorter-term sampling
- **Precision engineered and manufactured**
- **Disposable anti-static plastic, designed for one-time use — no cleaning required**
- **Disposable PPI® Sampler Options**
  - **Preloaded** with filter and pre-oiled impaction substrates by SKC
  - **Preloaded, preweighed** filter and pre-oiled impaction substrates by SKC
  - **Empty** except for pre-oiled impaction substrates, ready for lab or user to load filter
- **The proof is in the performance**
  - Published in the Journal of Physics — *visit https://doi.org/fbccwk*
  - Referenced in the OSHA Final Silica Rule
  - Rutgers evaluation of PPI performance — *visit www.skcinc.com/report-rutgers-07-14-2020-ppi*
- **Thoracic model ideal for sampling hard metals with Co and tungsten carbide as Co**

Sample Time:	*Select PPI model and contact lab for sample time to meet LOQ*
Sample Rate:	*2, 4, or 8 L/min*
Sample Pump:	*Universal or AirChek Series for 2 and 4 L/min; Leland Legacy for 8 L/min*
Sample Media:	*37-mm filter and support*
Tubing:	*1/4-inch ID*

A Closer Match to the Entire ISO 7708/CEN Curve with PPI

With its four-impactors-in-parallel design, and precision engineering and manufacturing, only the original SKC PPI Sampler provides the most precise match to the entire ISO 7708/CEN curve.





The Original SKC Disposable PPI Samplers

Convenient for Professionals and Labs

225-3851 Series PPI Samplers

Available in Bulk Packs

SKC provides PPI Samplers preloaded with PVC filter in bulk packs of 25, 50, or 100. *Contact SKC for Cat. Nos. and more information.*

Preloaded Disposable Plastic PPI Samplers

Select the PPI for the desired convention.

Description	Cat. No.	Qty.
Preloaded Disposable PPI Samplers* contain four porous plastic disc impaction substrates, one 37-mm cellulose support, and one collection filter as noted		
Respirable PPI (red), 8 L/min, plastic, with 5.0-µm PVC filter	225-3841	ea
Respirable PPI (orange), 4 L/min, plastic, with 5.0-µm PVC filter	225-3871	ea
Respirable PPI (gold), 2 L/min, plastic, with 5.0-µm PVC filter	225-3851 225-3851B	ea 50
Respirable PPI (gold), 2 L/min, plastic, with 1.0-µm PTFE filter, no support	225-3852	ea
Thoracic PPI (blue), 2 L/min, plastic, with 0.8-µm MCE filter	225-3861	ea
Thoracic PPI (blue), 2 L/min, plastic, with R-100 Quartz filter	225-3862	ea
With Preweighed Filter		
Respirable PPI (red), 8 L/min, plastic, 5.0-µm PVC filter preweighed to 5 decimals; unit supplied in tamper-evident inner bag	225-3841-PW	ea
Respirable PPI (orange), 4 L/min, plastic, 5.0-µm PVC filter preweighed to 5 decimals; unit supplied in tamper-evident inner bag	225-3871-PW	ea
Respirable PPI (gold), 2 L/min, plastic, 5.0-µm PVC filter preweighed to 5 decimals; unit supplied in tamper-evident inner bag	225-3851-PW 225-3851C-PW	100

* *Designed for one-time use*

Partner SKC pumps with PPI Samplers
see pages 12-25

User-loaded Disposable Plastic PPI Samplers

Select the PPI for the desired convention.

Description	Cat. No.	Qty.
User-loaded Disposable PPI Samplers* contain four porous plastic disc impaction substrates, *require collection filter and support; see information below and select based on application*		
Respirable PPI (red), 8 L/min, plastic	225-384	ea
Respirable PPI (orange), 4 L/min, plastic	225-387	ea
Respirable PPI (gold), 2 L/min, plastic	225-385 225-385A	ea 25
Thoracic PPI (blue), 2 L/min, plastic	225-386	ea
Filters for User-loaded PPI Samplers		
PVC Filters, 37 mm, 5.0-µm pore size	225-5-37	100
MCE Filters, 37 mm, 0.8-µm pore size	225-1939	100
Filter Supports for User-loaded PPI Samplers		
Support Pads, cellulose, 37 mm	225-27	100
Stainless Steel Screen, 37 mm, wide mesh	225-26	ea

* *Designed for one-time use*

For the SM-7204 Direct-reading Silica Monitor
see page 155

See our Silica Sampling Solution video and more
skcinc.com

Accessory	Cat. No.	Qty.
Calibration Adapter, for Disposable PPI Samplers only	225-389	ea

For Reusable PPIs, see page 128.

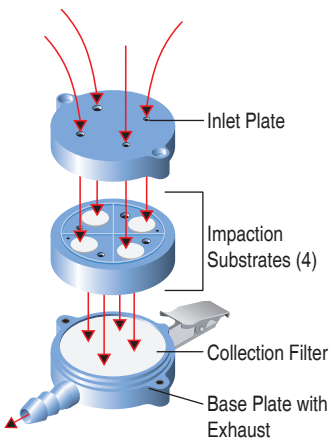
V Video | P PowerPoint | W Webinar | S Sampling Solution
Visit skcinc.com

The Original SKC Reusable PPI Samplers

Listed in the OSHA Silica Rule

PPI ADVANTAGES

- **The PPI four-impactor design** is precision engineered and manufactured to provide the most precise match to the entire ISO 7708/CEN curve. *For more on PPI performance, visit skcinc.com.*



- **No tipping hazard!** Invert PPI without causing large particle invalidation of the filter sample.

- **Collection efficiency precisely matches ISO 7708/CEN criteria adopted in the OSHA Final Silica Rule**
- **Respirable models available in three flow rates**
  - **2 and 4 L/min models** for TWA sampling
  - **8 L/min model** for shorter-term sampling
- **Reusable aluminum — use with any suitable 37-mm filter**
- **Load with disposable pre-oiled impaction substrates**
  - Reduce particle bounce and buildup effects
- **Only 3.3 ounces (93.6 grams) — for personal and area sampling**
- **The proof is in the performance**
  - Published in the Journal of Physics – *visit https://doi.org/fbccwk*
  - Referenced in the OSHA Final Silica Rule
  - Rutgers evaluation of PPI performance – *visit www.skcinc.com/report-rutgers-07-14-2020-ppi*
- **Thoracic model ideal for metalworking fluids (NIOSH Method 5524 and TLV), hard metals with Co, tungsten carbide as Co, and sulfuric acid mist (MDHS 14/4)**

Sample Time:	*Select PPI model and contact lab for sample time to meet LOQ*
Sample Rate:	*2, 4, or 8 L/min*
Sample Pump:	*Universal or AirChek Series for 2 and 4 L/min; Leland Legacy for 8 L/min*
Sample Media:	*37-mm filter and support (and four impaction substrates)*
Tubing:	*1/4-inch ID*

Reusable Aluminum PPI Samplers

Select the PPI for the desired convention, choose application-appropriate filter and support, and order impaction substrates; see below.

Description	Cat. No.	Qty.
Reusable PPI Samplers, *require substrates, filters, and supports*		
Respirable PPI (red), 8 L/min, aluminum	225-383	ea
Respirable PPI (orange), 4 L/min, aluminum	225-382	ea
Respirable PPI (gold), 2 L/min, aluminum	225-380	ea
Thoracic PPI (blue), 2 L/min, aluminum	225-381	ea

Partner SKC pumps with PPI Samplers
see pages 12-25

Collection Filters, *required for sampling*	Cat. No.	Qty.
PVC Filters, 37 mm, 5.0-µm pore size	225-5-37	100
MCE Filters, 37 mm, 0.8-µm pore size	225-1939	100
PTFE Filters, 37 mm, 2.0-µm pore size, unlaminated, for MWF	225-17-33	100

Impaction Substrates, *four required for each sample for Reusable Aluminum PPI models*	Cat. No.	Qty.
Porous Plastic Discs, 3/8-inch diameter, pre-oiled, ready to use, disposable	225-388	200

Accessories	Cat. No.	Qty.
Multi-purpose Calibration Jar	225-111	ea
Forceps, stainless steel, with non-serrated flat tips	225-8371	ea
Filter-Keeper, for transport and storage of 37-mm filters	225-8303A	10

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For Disposable PPIs and filter supports, see pages 126-127.

IMPACT Sampler

Ambient PM10, PM2.5, or PM Coarse Sampling at 10 L/min

- Ideal for environmental PM sampling and indoor air studies
- Use with Leland Legacy or any pump at 10 L/min
- Compact design
- Higher flow rate provides increased sensitivity
- Convenient operation
  - Removable filter cassette for fast media changes
  - Disposable ready-to-use pre-oiled impaction discs reduce particle bounce — no cleaning or greasing
  - Included rain cover protects sampler during outdoor use
  - Optional quick-mount bracket secures sampler virtually anywhere

Featured in the DPS System! see pages 26-27

The patented‡ SKC IMPACT single-stage inertial impactor is designed for the efficient collection of PM10, PM2.5, or PM Coarse $_{(10\text{-}2.5)}$ in ambient air. IMPACT media changes are as easy as removing the filter cassette and replacing it with one already loaded. IMPACT's higher flow rate requirement provides increased sensitivity for low levels of PM. Go to *skcinc.com/media/documents/Modular_Impactors_Poster.pdf* for sampling efficiency data.

Sample Time:	*Varies*
Sample Rate:	*10 L/min*
Sample Pump:	*Leland Legacy*
Sample Media:	*47-mm filter, requires impaction substrate*
Tubing:	*3/8-inch ID*

Leland Legacy Pump for IMPACT

While IMPACT can be used with any pump at 10 L/min, partnering IMPACT with the Leland Legacy sample pump provides a highly efficient sampling system for environmental monitoring or indoor air studies. *See more information on the Leland Legacy Pump on pages 24-25 and the DPS System on pages 26-27.*

IMPACT Sampler		Cat. No.	Qty.
IMPACT Sampler includes sampler inlet and body, filter cassette, calibration adapter, and rain cover for sampler; *requires collection media and impaction substrate sold separately; see below*			
	PM2.5	**225-392**	**ea**
	PM10	**225-390**	**ea**
	PM Coarse includes 2 filter cassettes	**225-3911**	**ea**
Collection Filters for IMPACT Sampler (not supplied with IMPACT or DPS System) *Select a filter based on your application; required for sampling*			
Quartz Filters, 47 mm, Tissuquartz, 432 µm thick		**225-1823**	**25**
PTFE Filters,§ 47 mm, 2.0-µm pore size, with PMP support ring		**225-1747**	**50**
Impaction Substrate, *required for sampling; limited shelf-life*			
Impaction Discs, 37 mm, pre-oiled, ready to use, disposable		**225-395**	**25**
		225-395A	**50**
Accessories			
IMPACT Sampler Inlet Only, interchangeable on IMPACT body	**PM2.5**	**P54204**	**ea**
	PM10	**P54202**	**ea**
Filter Cassette		**225-396**	**ea**
Filter Cassette Opener		**225-397**	**ea**
Mounting Bracket		**225-399**	**ea**
PM Coarse Ring includes filter cassette, adapts IMPACT PM10 to an IMPACT PM Coarse		**225-3912**	**ea**
Petri Dish Slide, for filter transport		**225-2-01**	**100**
Calibration Adapter		**225-394**	**ea**

‡ *US Patent No. 7,334,453*

§ *Back pressure on PTFE filters can vary within the same lot.*

For a deployable particulate sampling system featuring the IMPACT Sampler, see the DPS System on pages 26-27.

ABOUT

Permanent State Rules Adopted for Wildfire Smoke

California and Oregon OSHA and the Washington Department of Labor and Industries have adopted permanent rules to regulate on-the-job wildfire smoke exposure. Check your state's website for more information. SKC offers tools to help you measure ambient PM2.5 (*see IMPACT Sampler above*) and workplace PM2.5 concentration levels (*see PMI Samplers on page 131*). For real-time readings with built-in US AQI for PM2.5, *see the HD-1620 on pages 156-157.*

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Personal Environmental Monitor (PEM)

Choice of Flows for PM10 and PM2.5 in Indoor Air

Pumps for sampling with the PEM

- *2 or 4 L/min flow rates, see the AirChek Series on pages 14-21*
- *10 L/min flow rate and 24-hour sampling, see the Leland Legacy on pages 24-25*

Referenced in EPA Method IP-10A
- For particles in indoor air

Small and unobtrusive
- Connect to a personal sample pump and clip in a worker's breathing zone
- Use with a 10 L/min pump for 24-hour area sampling

Suitable for LEED Green Building sampling

The Personal Environmental Monitor is a small, lightweight impaction device used with a personal sample pump to provide effective sampling of PM10 and PM2.5 in indoor air. Personal exposure is determined through gravimetric analysis for particle mass and chemical analysis for specific compounds.

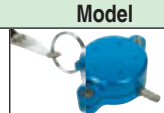
Sample Time:	*Varies*
Sample Rate:	*2, 4, or 10 L/min*
Sample Pump:	*Universal, AirChek Series, or Leland Legacy*
Sample Media:	*37-mm PTFE filters**
Tubing:	*3/16-inch ID*

How the PEM Works

The PEM consists of three major parts: cap, impaction ring assembly, and base. A 37-mm after-filter is inserted in the base and the PEM assembled. When used with a personal sample pump at the required flow rate, aerosol is accelerated through a number of nozzles in the cap. Through inertia, particles larger than the 50% cut-point of the sampler impact onto a greased impaction ring and can be discarded after sampling. Particles smaller than the 50% cut-point pass through the impactor and collect on the 37-mm after-filter. Six models of PEM are available for the collection of PM10 or PM2.5 at three different flow rates.

APPLICATIONS

- *Childhood asthma studies*
- *Green Building certification*
- *IAQ studies*
- *School zone investigations*

Cut-point	Model	Flow Rate	Cat. No.	Qty.
2.5 µm		2 L/min	**761-203**	**ea**
		4 L/min	**761-203A**	**ea**
		10 L/min	**761-203B**	**ea**
10 µm		2 L/min	**761-200**	**ea**
		4 L/min	**761-200A**	**ea**
		10 L/min	**761-200B**	**ea**
Accessories				
PEM Calibration Adapter			**761-202**	**ea**
After-filter, 37-mm, 2.0-µm PTFE* with PMP support ring			**225-1709**	**50**
PEM Clamping Device, ensures nozzle cap is clamped parallel to base with correct clamping force applied			**761-201**	**ea**

* *Back pressure on PTFE filters can vary within the same lot.*

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Personal Modular Impactor (PMI)

Personal PM10, PM2.5, or PM Coarse Sampling at 3 L/min

- **Closely follows PM2.5 or PM10 as defined by EPA** *(see far right)*
- **Use with any constant flow pump at 3 L/min**
- **Disposable, pre-oiled impaction discs**
  - Reduce particle bounce for high collection efficiency
  - No cleaning and re-oiling needed; reduces possibility of contamination compared to impactors with reusable discs that need to be cleaned and re-oiled
- **Compact and lightweight — only 2.5 ounces (71 grams)!**
  - Ideal for personal or micro-environmental sampling
- **Convenient modular design for easy operation**
  - Removable filter cassette for easy media changes
  - Convenient clip for mounting sampler in the breathing zone
- **PMI PM10 model is easily converted with accessory ring to measure PM Coarse**

No cleaning or greasing!

Sample Time:	*Varies*
Sample Rate:	*3 L/min*
Sample Pump:	*Universal or AirChek Series*
Sample Media:	*37-mm filter, requires impaction substrate*
Tubing:	*1/4-inch ID*

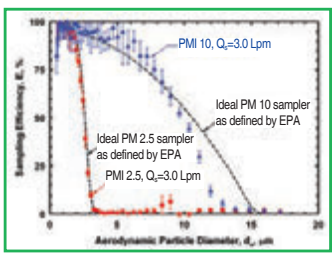
The patented* SKC Personal Modular Impactors are designed for the highly efficient collection of PM10, PM2.5, or PM Coarse $_{(10\text{-}2.5)}$. The samplers are easy to use with their removable filter cassette and pre-oiled impaction disc. The 25-mm pre-oiled impaction disc mounts directly on top of the filter cassette to reduce particle bounce for high collection efficiency. A 25-mm filter may be used as an alternative impaction substrate for chemical analysis of particles. The PMI Coarse model includes a second filter cassette to allow collection of particles < 10 µm but larger than 2.5 µm. *See About at right.*

PMI Sampler	Cat. No.	Qty.
Personal Modular Impactor includes impactor and filter cassette with support screen, *requires collection filter and impaction substrate sold separately; see below*		
PM2.5 (gold)	225-352	ea
PM10 (silver)	225-350	ea
PM Coarse includes 2 filter cassettes and filter retainer	225-351	ea
Recommended Collection Filters, *required for sampling*		
Quartz Filters, 37 mm, Tissuquartz, 432 µm thick	225-1822	25
PTFE Filters,† 37 mm, 2.0-µm pore size, with PMP support ring	225-1709	50
PTFE Filters,† 37 mm, 1.0-µm pore size	225-17-32	100
Recommended Impaction Substrate, *required for sampling; limited shelf-life*		
Pre-oiled Porous Plastic Discs,‡ 25 mm, ready to use, disposable	225-355	25
	225-355A	50
Accessories		
PM Coarse Ring includes filter cassette, adapts a PMI 10 to a PMI Coarse	225-3512	ea
Replacement Filter Cassette	225-356	ea
PMI Cassette Opener	225-357	ea
Forceps, stainless steel, non-serrated flat tips, *see p. 117*	225-8371	ea
Filter-Keepers, 37 mm, for filter transport, *see p. 117*	225-8303	100
	225-8303A	10
PMI Calibration Adapter	225-358	ea
Filter Retainer, secures filter in impaction substrate position on top of cassette	225-354	ea

* *US Patent No. 7,334,453* † *Back pressure on PTFE filters can vary within the same lot.*
‡ *A 25-mm filter may be used as an alternative impaction substrate for chemical analysis; see pages 100-108 for filters.*

ABOUT

PMI Performance
The graph below demonstrates the high sampling efficiency of the PMI PM2.5 and PM10 Samplers when compared to the EPA PM2.5 and PM10 criteria curves. *For more information, visit skcinc.com/media/documents/Modular_Impactors_Poster.pdf.*



ABOUT

PM Coarse Sampling with PMI
The PMI Coarse model includes a PM10 inlet, PM2.5 inlet (Coarse Ring), and two filter cassettes. **In Stage 1,** a 25-mm impaction substrate is placed in the top of the filter cassette beneath the PM10 inlet, but no collection filter is installed. **In Stage 2,** a 25-mm filter is placed in the impaction substrate position in the top of the second filter cassette beneath the PM2.5 (Coarse Ring) while a 37-mm collection filter is loaded into the cassette bottom. This allows for the collection of particles < 10 µm but > 2.5 µm.

Sioutas Personal Cascade Impactor

Separates Ultrafine, Fine, and > 2.5-µm Particles Simultaneously

ADVANTAGES

Choose the Sioutas Personal Impactor for the highly efficient collection of airborne particles in five size ranges:

- ☑ > 2.5 µm
- ☑ 1.0 to 2.5 µm
- ☑ 0.50 to 1.0 µm
- ☑ 0.25 to 0.50 µm
- ☑ < 0.25 µm

Recent epidemiological studies show that ultrafine, fine, and > 2.5-µm particles may have greater pulmonary inflammatory potency than larger particles and associate increased morbidity and mortality with increased exposure to these particles. The Sioutas Impactor is the only personal impactor that precisely separates and collects ultrafine, fine, and > 2.5-µm particles simultaneously.

Precise particle separation
- Particle size cut-points: 2.5, 1.0, 0.50, and 0.25 µm
- Maintains high collection efficiency even at high particle concentrations

Optimized at a 9 L/min flow rate with low pressure drop for 24-hour sampling
- Improves analytical sensitivity
- Minimizes non-detectable samples

Preserves unstable compounds
- Chemically inert collection substrate
- No impaction grease to contaminate sample

Minimal particle bounce and internal wall losses

Suitable for sampling in outdoor and indoor environments**

Size-fractionated samples can be analyzed gravimetrically, chemically, and microscopically

Small and lightweight for personal or area sampling

Sample Time:	*Varies*
Sample Rate:	*9 L/min*
Sample Pump:	*Leland Legacy*
Sample Media:	*25 and 37-mm filters*
Tubing:	*3/8-inch ID*

Leland Legacy Sample Pump
The compact, portable, and battery-operated Leland Legacy Sample Pump provides a 9 L/min flow rate for optimum Sioutas Impactor performance.
For more information, see pages 24-25.

Certifications
ETV *performance verified with Leland Legacy Sample Pump*

The patented† Sioutas Personal Cascade Impactor* separates and collects airborne particles in five size ranges: > 2.5 µm, 1.0 to 2.5 µm, 0.50 to 1.0 µm, 0.25 to 0.50 µm, and < 0.25 µm. When used with PTFE filters, the Sioutas Impactor is highly efficient at collecting particles without using impaction grease or substrate coatings and at retaining unstable compounds for size-fractionated chemical analysis.

Use the Sioutas Impactor with the Leland Legacy Sample Pump at 9 L/min to ensure precise particle separation at the specified cut-points. Particles above each cut-point are collected on a 25-mm filter in the appropriate stage with particles less than 0.25 µm collecting on the 37-mm after-filter *(optional)*. The small, lightweight Sioutas Impactor simply clips to a worker's collar or lapel for personal sampling and is also suitable for area sampling.

MORE INFORMATION
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Description	Cat. No.	Qty.
Sioutas Personal Cascade Impactor	**225-370**	**ea**
Tubing, Tygon, 3/8-inch ID, fits Sioutas Impactor and Leland Legacy pump, 10 feet	**225-1351**	**ea**

Filters for Sioutas Impactor

Description	Cat. No.	Qty.
After-filter, PTFE,‡ 37 mm, 2.0 µm *(optional)*	**225-1709**	**50**
Collection Filter (filter for 4 stages), PTFE,‡ 25 mm, 0.5 µm, *required*	**225-17-21**	**100**

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* *Developed by Dr. Constantinos Sioutas of the University of Southern California in partnership with the Mickey Leland National Urban Air Toxics Research Center (NUATRC)*

† *US Patent No. 6,786,105 (University of Southern California)*

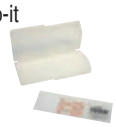
‡ *Back pressure on PTFE filters can vary within the same lot.*

** *Requires special provisions; see product operating instructions*

SKC BIOAEROSOL SAMPLERS

SKC Bioaerosol Sampler Guide

Use the guide below to determine the sampler that meets your applications.

Sampler	Principle of Operation	Flow Rate (L/min)	Contaminants	Sampler Advantages	Page
BioStage Single-stage Impactor 	Impaction onto culture media	28.3	Fungi (viable) and bacteria	• SureLock positive seal • Organisms remain intact and viable • Cost-effective and reusable • Time-proven collection method • Meets NIOSH Methods 0800 and 0801	134
BioSampler 	Collection into swirling liquid	12.5 (sonic flow)	Fungi (viable and non-viable), endotoxins, viruses, and bacteria	• Maintains constant collection efficiency over 8 hours • Reduces particle bounce and re-aerosolization; preserves viability • Many analysis options	136
Sterile Swab Kit 	Wipe sample	N/A	Fungi (viable and non-viable) and bacteria	• Easy to use • Suitable for growth cultures • Non-destructive • Collects surface contaminants	138
Carpet Sampling Cassette 	Filtration using porous membrane	10 (optimum)	Fungi (total) and fibers	• Easy to use • Suitable for high flows to enhance detection • Microvacuum nozzle for efficient sampling in carpeting	138
Stick-to-it 	Lift tape surface sample	N/A	Fungi (total), pollen, and fibers	• Ensures consistent sample area • Serialized for sample identification • Includes transport case for mailing to lab	138
Button Sampler 	Filtration using filter	4 (optimum)	Fungi (viable and non-viable), endotoxins, and bacteria	• Superior collection uniformity • Low sensitivity to ambient conditions • Sample suitable for viable and non-viable analysis • Personal or area bioaerosol sampling	139
VersaTrap Spore Trap Cassette 	Impaction onto sticky glass slide	15 (optimum)	Fungi (total), pollen, and fibers	• Reduces particle bounce • Prevents sample loss and blurring • Allows direct quantitative analysis • Enumeration of fungal spores with low culturability	140

SCAN ME

BioStage

Single-stage Viable Cascade Impactor

ABOUT

MRSA

Methicillin-resistant *Staphylococcus aureus* (MRSA) infections occur typically in hospitals, elder and child care facilities, gyms, schools, and jails. A 2008 IAQA presentation** recommends a viable cascade impactor (such as the SKC BioStage) with ChromAgar for sample times of 2 to 5 minutes for sampling MRSA in air and sterile swabs *(see page 138)* for sampling MRSA on surfaces where the superbug can live for weeks to months.

Single-stage impactor with spring clamps

Single-stage BioStage with SureLock seal

- **SureLock positive seal ensures sample integrity**
- **Corrosion-resistant aluminum**
  - Autoclavable
- **Collected organisms remain intact and viable**
- **Uses standard-size agar plates**
- **Easy setup and flow rate verification**
- **Proven viable sampling**
  - Meets ACGIH recommendations for bioaerosol sampling
  - Meets NIOSH Method 0800 and 0801 requirements
  - Studies show performance equivalent to Andersen N-6 and similar samplers‡

The SKC BioStage® viable cascade impactor meets NIOSH requirements and ACGIH recommendations for sampling indoor and outdoor mold and bacteria. The BioStage comprises an inlet cone, precision-drilled 400-hole impactor stage, and a base that holds a standard-size agar plate. A high flow pump, such as the QuickTake 30 *(see page 135)*, pulls microorganisms in air through the holes (jets) where they are collected on the agar surface. Testing demonstrates that BioStage provides performance equivalent to the industry-standard Andersen N-6.‡ What sets BioStage apart from other samplers is its SureLock positive seal (instead of bulky spring clamps) that ensures sample integrity.

SureLock seal for sample integrity — only from SKC!

	BioStage
Jet Classification Stage	400 holes (0.25-mm diameter)
Sample Rate	28.3 L/min
Median Cut-point (D_{50})	0.6 µm
Sample Media	90 to 100-mm agar plates*
Analysis	Colony culture†
Tubing	1/4-inch ID

References

† *Yao, M. and Mainelis, G., "Analysis of Portable Impactor Performance for Enumeration of Viable Bioaerosols," Jnl. of Occup. and Env. Hyg., 4:7, 2007, pp. 514-524, https://doi.org/cxd7kk*

‡ *Samimi, B. and Shufutinsky, A., "Comparison of the Thermo-Andersen N6, the Aerotech A6, the SKC BioStage, and the SKC Micromedia Viable Samplers in Collecting Airborne Fungal Spores," AIHce 2005, San Diego, CA, Final Program, p. 43*

** *Dobranic, J., "Superbugs in Our Communities - An Introduction for the IEQ Professional," EMSL, IAQA Conference, 2008, Tampa, FL*

Hsu, B., et. al., "Role of Bioaerosols on the Short-distance Transmission of Multidrug-resistant Methicillin-resistant Staphylococcus aureus (MRSA) in a Chicken Farm Environment," Antibiotics (Basel), 11:(1): 81, 2022, www.ncbi.nlm.nih.gov/pmc/articles/PMC8773248/

Description	Cat. No.	Qty.
BioStage* single-stage cascade impactor; *available in pump kit, see p. 135*	**225-9611**	**ea**
Accessories		
Calibration Adapter for BioStage, allows tubing to connect to BioStage inlet	**P33100**	**ea**
Mounting Bracket for QuickTake 30, holds BioStage in place on pump during sampling	**228-9531**	**ea**

* *Requires microbiological media supplied by analytical laboratories; for a lab list, go to skcinc.com/lab*

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BioStage Pump Kit

Complete Viable Mold and Bacteria Sampling Kit

SKC combines the high-performance BioStage Viable Cascade Impactor with the power of the QuickTake 30 Sample Pump for a complete viable mold/bacteria sampling kit. With the BioStage Pump Kit and fresh agar plates from your laboratory, you are ready to sample!

The kit includes:

- BioStage Viable Cascade Impactor *(see page 134)*
- QuickTake 30 Sample Pump,Δ 10 to 30 L/min constant flow *(see pages 28-29)*
- AC charger/adapter
- Mounting bracket with inlet adapter designed to mount BioStage directly on the pump
- Calibration adapter
- Rotameter
- Tubing
- Deluxe carry case

Why Choose the QuickTake 30 Sample Pump?

- Provides constant 28.3 L/min flow rate
- Mounting bracket secures BioStage to pump for one-handed transport of pump and sampler
- No noisy, hot, and AC-powered vacuum pump
  - *QuickTake 30Δ is low noise and battery powered*
- Powerful Li-Ion battery provides up to 4-hour run times at 28.3 L/min

In addition to being an ideal pump for the BioStage, the QuickTake 30Δ provides reliable constant flows for other higher flow applications including sampling with spore trap, asbestos, microvacuum, and other cassettes as well as any viable cascade impactor or other sampler within the pump's back pressure and flow range.

Description		Cat. No.	Qty.
BioStage Pump Kit includes BioStage,* QuickTake 30 sample pump,Δ AC charger/adapter, mounting bracket with inlet adapter, calibration adapter, rotameter, tubing, and deluxe carry case	**100-240 V**	**228-9530K**	**ea**

Δ *QuickTake 30 pump is **not** CE/UKCA marked.*

* *Requires microbiological media supplied by analytical laboratories; for a lab list, go to skcinc.com/lab*

Learn more at skcinc.com!

BioSampler

Collects Bioaerosols into Liquid for Maximum Viability

ADVANTAGES

- ☑ Three tangential nozzles eject particles at an angle to the inner wall, reducing particle bounce and preserving microorganism integrity.
- ☑ Swirling liquid collection method minimizes re-aerosolization and gently entrains bioaerosols to preserve viability.
- ☑ For highest efficiency, use with non-evaporating collection liquids that have a higher viscosity than water, such as ViaTrap® mineral oil.‡
- ☑ When used with ViaTrap, collection efficiency stays constant over an 8-hour sampling period.
- ☑ Complete glass construction allows easy cleaning, sterilizing, autoclaving, and reuse.
- ☑ Samples are suitable for five different analyses. *See BioSampler Analysis Options at right.*

APPLICATIONS

- *Indoor air quality investigations*
- *Hospitals and veterinary clinics*
- *Agricultural dust studies*
- *Research*
- *Public building investigations*
- *Food handling industry*
- *Pulp and paper mills and wastewater treatment plants*

- **Ideal for airborne bacteria, fungi, pollen, viruses, endotoxins, mycotoxins, and other fragments**
- **Constructed of quality glass — autoclavable**
- **Collection method ensures high rate of microorganism viability**
- **Extends sample time to over 8 hours with ViaTrap liquid**
- **Overcomes sampling problems with impinger samplers**
- **Inlet limits collection of particles to those that would pass through the human nose**

The BioSampler® is a highly efficient glass collection device used with a high-volume sonic flow pump to trap airborne microorganisms for analysis. Externally, BioSampler resembles an All-Glass Impinger (AGI-30); internally, BioSampler is specially designed to reduce particle bounce and maintain maximum viability.

Sample Time:	*Up to 8 hours*
Sample Rate:	*Sonic flow through BioSampler nozzles (12.5 L/min)*
Sample Pump:	*BioLite*
Sample Media:	*Non-evaporating liquids, ViaTrap‡ recommended*
Tubing:	*1/4-inch ID and 3/8-inch ID*

BioSampler Analysis Options

- **Growth Culture** quantifies/characterizes airborne bacteria and fungi.
- **Microscopic** enumerates total airborne bacteria and fungi (provides limited identification).
- **Biochemical Assay** quantifies biological compounds based on reaction to a chemical.
- **Immunoassay** quantifies airborne allergens based on antibodies binding to a specific target antigen.
- **Polymerase Chain Reaction (PCR)** identifies bioaerosols by screening for a specific genus or species, including coronavirus. *May require use of sterile water as collection liquid; check with laboratory.*

For a list of microbiological laboratories, visit skcinc.com/lab.

Description		Cat. No.	Qty.
BioSampler, three-piece glass including inlet section, outlet section, and collection vessel *(bottom — does not include ground joint cap)* Inlet and outlet sections are a matched set	**20 ml** **20 ml** **5 ml**	**225-9595** **225-9595K4** **225-9593**	**ea** **4** **ea**
BioSampler Collection Vessel (bottom) and ground joint cap, for transporting samples	**20 ml** **5 ml**	**225-9596** **225-9596A**	**ea** **ea**
BioSampler Mini Kit includes 1 BioSampler, two 20-ml collection vessels (bottoms) with caps, 1 BioSampler case with mounting rod, and 1 ViaTrap‡ (120 ml)		**225-9597**	**ea**
ViaTrap Collection Media,‡ special mineral oil for bioaerosol sampling	**120 ml** **500 ml** **950 ml**	**225-9598A** **225-9598** **225-9599**	**ea** **ea** **ea**
Glass Trap, to protect pump, for area sampling, can be used with or without sorbent, *see p. 70 for sorbent Cat. No. 225-22-02*		**225-22**	**ea**

‡ *May not be suitable for PCR analysis; check with laboratory*

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Complete BioSampler System

Efficient Collection of Bacteria, Fungi, and Viruses

- **Includes all equipment and media for bioaerosol sampling**
- **Portable sonic flow pump**
  - Maintains ≥ 15 inches mercury downstream pressure
  - No additional critical orifice needed when used with BioSampler
  - Includes protective housing with handle, vacuum gauge, and valve
- **Mounting rod secures BioSampler to case**

Sampling with the BioSampler

The BioSampler is operated with a sonic flow pump, such as the BioLité, that can maintain ≥ 15 inches mercury or 0.5 of an atmosphere of downstream pressure in the system. The BioSampler's three nozzles act as critical (sonic) orifices, each permitting 4.2 L/min of ambient air to pass through for a total flow rate of approximately 12.5 L/min.

The Deluxe BioSampler System includes everything needed for liquid-based airborne microorganism sampling.

BioLité Sample Pump

The portable BioLité Sample Pump is ideal for use with the BioSampler. BioLité provides non-compensated airflow up to 62 L/min or sonic flow. The BioSampler acts as a critical orifice for sonic flow without additional orifices. BioLité features mounting points on either side, allowing two BioSamplers to be attached and operated concurrently at a total flow rate of 25 L/min at 15 inches Hg back pressure.

BioLité Sample Pump
Includes protective housing with handle, vacuum gauge, and valve, supplied without orifices or rotameter, AC operation only, weighs 16 pounds (7.25 kg)

Cat. No. 228-9615..... 115 V
Cat. No. 228-9620..... 230 V

Certifications

CE, UKCA

Description	SKC Inc. Cat. No. 115 V	SKC Ltd. Cat. No. 230 V
Deluxe BioSampler System includes 1 BioSampler, 2 additional 20-ml collection vessels with caps, 1 case with mounting rod, 1 ViaTrap* (120 ml), 1 BioLité pump, tubing/adapters, and rotameter	228-9615KD	228-9620KBD
Basic BioSampler System includes 1 BioSampler, 1 additional 20-ml collection vessel with cap, 1 mounting bracket, 1 BioLité pump, tubing/adapters, and rotameter	228-9615K	228-9620KB

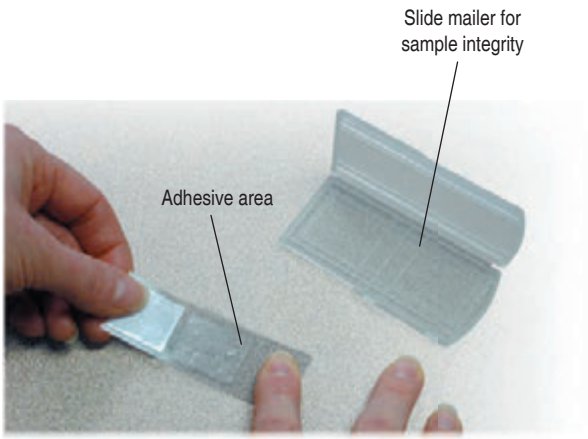
* *May not be suitable for PCR analysis; check with the laboratory*

MORE INFORMATION
skcinc.com

For a list of microbiological laboratories, visit skcinc.com/lab.

Stick-to-it Lift Tape

Surface Sampling of Biological Contaminants



- Easy to use, inexpensive slides
- Consistent sample area for better data interpretation
- Flexible plastic for sampling irregular surfaces
- Individually serialized for sample identification

Stick-to-it flexible plastic microscope slides feature an adhesive area for easy sampling. Identify the sample area, press slide adhesive to the surface, place slide in provided mailer, and send it to a laboratory for analysis.

Description	Cat. No.	Qty.
Stick-to-it	225-9808	10
	225-9809	50

Quantity discounts may be available. Contact your SKC distributor.

Carpet Sampling Cassettes

Collection of Fungal Spores for Microscopic Analysis

- Nozzle for easy sampling of irregular surfaces/carpeting
- Collect fungal spores in settled dust using a high flow pump

Sample Time:	*Varies*
Sample Rate:	*10 L/min, recommended*
Sample Pumps:	*High-volume vacuum or QuickTake 30*
Tubing:	*1/4-inch ID and 3/8-inch ID*

Designed for the collection of fungal spores from carpets and other dusty areas, the 37-mm Carpet Sampling Cassette contains a 0.4-µm pore size polycarbonate filter with an attached microvacuum nozzle. A high flow pump, such as the QuickTake 30 *(not CE/UKCA marked; see pages 28-29)*, is used for sample collection at a recommended flow rate of 10 L/min. Samples are sent to an environmental microbial laboratory for analysis of fungal spores. Carpet Sampling Cassettes are offered individually or in a convenient Carpet Sampling Cassette Kit (*see below*).

Description	Cat. No.	Qty.
Microvacuum Carpet Sampling Cassette, 37-mm, 0.4-µm polycarbonate filter in banded styrene cassette with microvacuum nozzle	225-9542	ea
Carpet Sampling Cassette Kit includes 10 microvacuum carpet cassettes Cat. No. 225-9542, 10 x 10-cm disposable templates, Luer adapters, zip bags, and labels	225-9540	ea
Templates		
Disposable manila paper, 10 x 10 cm	225-2415	250
	225-2415A	10

Sterile Surface Swab Kit

The Sterile Surface Swab Kit is ideal for determining the relative degree and type of biological contamination in an area. This non-destructive method can be used safely on most surfaces including irregular areas such as air return grills. The inert, non-toxic rayon tip permits good sample retrieval and adsorption. Each kit includes 10 sterile swabs in transport tubes and 10 templates (5 x 10 cm).

Description	Cat. No.	Qty.
Sterile Surface Swab Kit	225-2402	ea
Sterile Surface Swabs only	225-2400	50

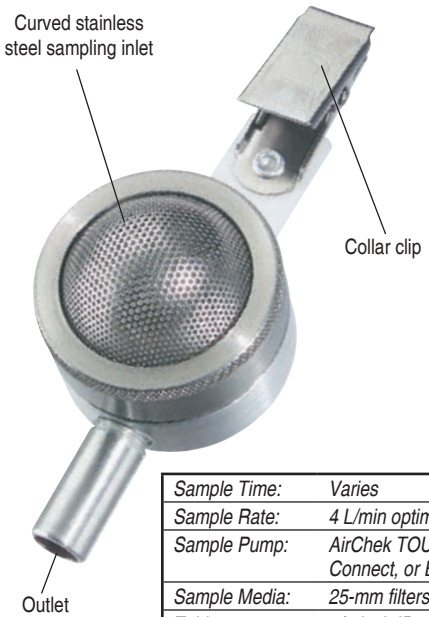
V Video | P PowerPoint | W Webinar | S Sampling Solution
Visit skcinc.com

For Microvacuum Cassettes for asbestos, see page 171.

Button Aerosol Sampler

Personal Filter Sampler for Inhalable-size Bioaerosols

- Collects bioaerosols for viable or non-viable analysis
- Autoclavable
- 4 L/min flow rate enhances sensitivity
- Follows closely the ISO 7708/CEN sampling criteria for inhalable particulate mass
- Inlet design reduces oversampling of very large particles and sensitivity to wind direction/velocity
- Aluminum construction with stainless steel inlet reduces electrostatic effects
- Small, lightweight for personal sampling; ideal for area sampling



Sample Time:	*Varies*
Sample Rate:	*4 L/min optimum*
Sample Pump:	*AirChek TOUCH, Connect, or Essential+*
Sample Media:	*25-mm filters*
Tubing:	*1/4-inch ID*

The Button Aerosol Sampler provides superior collection of inhalable particles, including bioaerosols such as bacteria and fungal spores for viable or non-viable analysis. Its high collection efficiency is due to its unique features:

- **Porous curved-surface inlet** improves collection characteristics of inhalable particles (< 100-µm aerodynamic diameter).
- **Stainless steel inlet** reduces electrostatic effects and contains evenly spaced holes that act as sampling orifices for multi-directional sampling and low sensitivity to wind direction and velocity.
- **Sampler is autoclavable**
- **Filter proximity to the inlet** minimizes transmission losses and provides equal distribution of particles and low intersample variation.

The Button Sampler follows closely the ISO 7708/CEN sampling criteria for inhalable particulate mass when operated with a sample pump at 4 L/min.

Selecting a Filter for Bioaerosol Sampling

Use the Button Sampler with a 25-mm gelatin membrane filter to maintain the survival of stress-sensitive microorganisms during short sampling periods for viable analysis *(see About above right)*. For non-viable analysis, use a 25-mm MCE or PVC filter. Polycarbonate filters are ideal for sampling multiple bioaerosols. *See Wang, C., et al. below right.*

Description	Cat. No.	Qty.
Gelatin, sterilized	225-9551	50
MCE, 1.2 µm	225-1912	100
Polycarbonate, 0.8 µm	225-1601	100
PVC, 5.0 µm	225-5-25	100

Description		Cat. No.	Qty.
Button Sampler, *requires a 25-mm filter; see above*		225-360	ea
Button Sampler Pump Kit includes Button Sampler, standard AirChek XR5000 Sample Pump, single charger, 3 feet (0.9 meter) of Tygon tubing, and calibration adapter, *requires a 25-mm filter; see above*	100-240 V	210-4121	ea
Accessories			
Button Sampler Calibration Adapter		225-361	ea
Filter Transport Case, for 25-mm filters, conductive plastic		225-67	ea

ABOUT

Using Gelatin Membrane Filters with the Button Sampler

For maximum microorganism survivability and superior collection of inhalable-size bioaerosols, use sterile gelatin membrane filters with the SKC Button Sampler. The Button Sampler features a unique inlet and proximity of the filter to the inlet to minimize transmission losses and provides for equal distribution of particles and low intersample variation. The Button Sampler is autoclavable, making it ideal for applications requiring pre-sterilization. Combining the Button Sampler with the nurturing properties of gelatin membrane filters creates a sampler that is most efficient at collecting inhalable bioaerosols for viable or non-viable analysis.

References

Yao, M. and Mainelis, G., "Analysis of Portable Impactor Performance for Enumeration of Viable Bioaerosols," Jnl. of Occ. and Env. Hyg., 4:7, 2007, pp. 514-524, https://doi.org/cxd7kk

Clark Burton, N., et al., "Physical Collection Efficiency of Filter Materials for Bacteria and Viruses," Annals of Occup. Hyg., Sept. 2006, pp. 1-9

Aizenberg, V., et al., "Performance of Air-O-Cell, Burkard, and Button Samplers for Total Enumeration of Airborne Spores," AIHA Journal, Vol. 61, Dec. 2000, pp. 855-864

Adshikari, A., et al., "Performance of the Button Sampler for Outdoor Bioaerosol Collection," abstract from American Assoc. of Aerosol Research Conf., 2002, NC

Wang, C., et al., "Field Evaluation of Personal Sampling Methods for Multiple Bioaerosols," PLoS ONE 10(3): e0120308, 2015, https://doi.org/f7ckzs

VersaTrap Spore Trap Cassette

Traps Smaller Mold Spores Using Higher Flows

- **High collection efficiency from 5 to 30 L/min**
  - Captures *Aspergillus* and *Penicillium* mold spores as small as 1.5 µm at 30 L/min *(see table below)*
- **A standard collection method for mold spore count and genus identification**
- **Easy analysis — ASTM Method D7391-20**
  - Positioning notches and flat edges provide for easy alignment on microscope stage
  - Uniform, well-defined rectangular deposition
- **Optimized slide adhesive**
  - Optically clear and tested for superior adhesion
- **SureSeal leak-free cassettes for sample integrity**
- **Unique serial number on each cassette for sample traceability**

QuickTake 30 Pump Ideal for Spore Traps
see pages 28-29

Not CE/UKCA marked

VersaTrap Spore Trap Cassettes provide the sampling versatility you need to capture mold spores and other particles ranging from 1.5 to 3.9 µm. Sampling is as easy as selecting the flow rate that will target the desired particle size *(see table)*, setting and verifying pump flow rate, and collecting the sample.

High Flows + Low Cut-points + No Particle Bounce =
High Collection Efficiency

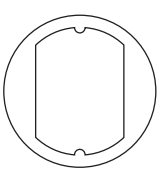
Flow Rate (L/min)	VersaTrap 50% Cut-point (µm)
30	1.5
25	1.7
20	1.9
15	2.3
10	2.8
5	3.9

MORE INFORMATION
skcinc.com

VersaTrap Design

The narrow slit inlet focuses particles toward the clear glass slide coated with a sticky substrate that holds the sample securely. Targeted size particles are effectively held in a well-defined rectangular footprint. Each slide is encased in a SureSeal leak-free cassette to ensure sample integrity.

VersaTrap Makes Analysis Easy



- Designed for easy slide removal
- Positioning notches and flat edges for fast, easy alignment
- Well-defined rectangular footprint for accurate analysis using standard equipment
- Adhesive prevents blurring or wash off during staining
- Unique serial numbers for sample traceability

Description	Cat. No.	Qty.
VersaTrap Spore Trap Cassettes, 37 mm, not banded, *limited shelf-life*	225-9820	10
	225-9821	50

For a list of microbiological laboratories, go to skcinc.com/lab.

V Video | P PowerPoint | W Webinar | S Sampling Solution
Visit skcinc.com

SKC PORTABLE INSTRUMENTS

SCAN ME

SKC Noise – Unheard of Ease in Noise Monitoring

SKC noise measurement instruments provide ease of use, accuracy, and features designed specifically for the OEHS professional. Experience seamless workplace noise assessments and environmental monitoring. SKC Noise instruments also provide a direct line to the SKC quality and service you trust.

See what all the noise is about on pages 142 to 149.

Innovative Hand-Arm Vibration System

SKC is excited to partner with Feraru Dynamics to bring you a portable instrument system that helps protect workers from overexposure to hand-arm vibration. Expanding our science to serve you.

See more on this exciting product on pages 150 to 151.

Deployable Precision Real-time Monitors

SKC is pleased to partner with Environmental Devices Corporation to offer the latest in deployable precision instruments for real-time personal, indoor air, and environmental monitoring of particulates, other contaminants, and parameters.

See pages 152 to 161 for more information on instruments for your applications.

NoiseCHEK

Personal Noise Dosimeter — Easiest to Use, Most Reliable Value

SKC's team of COHCs designed the NoiseCHEK Personal Dosimeter specifically for industrial hygienists and other OEHS professionals. What that means for you is more ease of use, features, and data versatility than any Class 2 dosimeter available. Choose NoiseCHEK to experience seamless noise measurement and the high level of SKC quality, service, and expertise you trust.

- **Intuitive**
- **Measures 70 to 140 dB and peak level to 143 dB**
  - A, C, and Z weighting
  - Fast and slow response time
  - Selectable exchange rate – 3, 4, or 5 dB
- **Four programmable virtual dosimeters for simultaneous compliance monitoring**
- **Largest display screen on a cable-free dosimeter**
- **1/1 and 1/3 octave band filters standard on all models**
- **Reliable ½-inch microphone – no calibration adapter needed with AcoustiCHEK Calibrator**
- **Bluetooth® Low Energy (BLE) models connect to mobile devices with the SmartWave dB mobile app** *— see page 143*
- **Voice note recording and threshold-triggered noise event recording**
- **Device lockout feature for security**
- **Motion sensor**
- **40+ hours run time**
- **Assembled in the USA**

Meets standards ANSI S1.25.1991 and IEC 61252:2017

SCAN ME

View our videos!
https://bit.ly/3FT70um

Certifications

Intrinsic safety: UL913, CAN/CSA C22.2, ATEX, IECEx, UKEX

Other: CE, UKCA

Connect with NoiseCHEK from Mobile and PC

SmartWave dB app for BLE Models
Free for iOS and Android Tablets/Phones

- Start/pause/stop NoiseCHEK
- View setup and monitor readings for up to four virtual dosimeters
- View octave band and history
- Add and review field notes on history files
- Generate and email/text compliance reports

Visit www.skcinc.com/smartwave

DataTrac dB Software
Free Download to PC

- Update device firmware
- Set up as many as four virtual dosimeters
- Program sampling times
- Enable/disable device lockout
- Set custom time for projected pTWA/pDose
- Review notes, voice notes, and audio recordings
- Create exclusion and offset zones, "What If" scenarios; combine several selected runs (samples)
- Generate and share data and compliance reports with graphs

Visit www.skcinc.com/datatracsoft

NOISECHEK – AVAILABLE THE WAY YOU NEED IT

- **With or without Bluetooth**
- **With intrinsic safety — UL**
- **Non-intrinsically safe models available**
- **MSHA-approved model coming soon!**

CONTACT SKC!

ORDERING

NoiseCHEK Dosimeters with BLE	Not Intrinsically Safe Cat. No.	Intrinsically Safe Cat. No.	Qty.
Single Kit with Class 2 Calibrator includes dosimeter*, 1-unit charging dock with power supply, USB cable, and USB drive with manual, in a protective carry case	701-001K-C	701-001KS-C	ea
3-pack Kit with Class 2 Calibrator includes 3 each: dosimeters*, 1 each: 5-unit charging dock with power supply, replacement windscreen, USB cable, and USB drive with manual, in a protective charging carry case	701-001K3-C	701-001K3S-C	ea
5-pack Kit with Class 2 Calibrator includes 5 each: dosimeters*, 1 each: 5-unit charging dock with power supply, replacement windscreen, USB cable, and USB drive with manual, in a protective charging carry case	701-001K5-C	701-001K5S-C	ea

** NoiseCHEK dosimeters contain Li-Ion batteries and are subject to special shipping regulations*

Accessories and Replacement Parts		Cat. No.	Qty.
Charging Docks for charging and connection to PC, *includes power supply* 100-240 V			
1-unit		701-002	
5-unit		701-003	ea
AcoustiCHEK Calibrator, Class 2, *see p. 148 for details*		703-002	ea
Replacement NoiseCHEK Microphone, 1/2 inch		701-005	ea
Replacement Windscreen		701-004	ea
Hard-sided Carry Cases, foam-filled, airtight, watertight, dustproof, and crushproof, accomodate indicated number of NoiseCHEKs and accessories	**Single Kit Case**	224-916	ea
	5-pack Kit Case	224-917	ea

For more on AcoustiCHEK Calibrators and noise instrument recalibration, see pages 148-149.

SoundCHEK Essential

SKC SoundCHEK Essential is exactly what you need to perform workplace noise assessments and environmental monitoring. Get easy setup, intuitive operation, and high versatility in a sound level meter — at a great value. SoundCHEK Essential by SKC gives you a direct line to the experts you trust for quality, service, and support.

Sound Level Meter — Ease, Versatility, and Value

Cut through the noise and **call SKC!**

- **Highly intuitive operation**
- **Fast switching between applications**
- **Measures 25 to 140 dB**
  - Peak level from 40 to 143 dB
- **User-selectable measurement parameters**
  - Dual measurements
  - A, C, and Z weighting
  - Slow, Fast, and Impulse
  - OSHA and UK/EU settings
- **Displays OSHA, UK/EU, or custom defined exposure parameters**
  - OSHA: LEPd, LAVG, Exposure (Pa2h) %DOSE, %DOSE/HR, TWA
  - UK/EU: LEPd, LAVG, Exposure (Pa2h) %DOSE, %DOSE/HR, POINTS, POINTS/Hr
- **Timer and datalogging**
  - 6000 measurements stored (1 MB memory)
- **Large full-color display**
- **New polycarbonate anti-glare display window resists scratches**
- **12-hour continuous run time on alkaline batteries**
- **Easy accurate calibration with SKC AcoustiCHEK Calibrator** *(see page 148)*
- **Ergonomic and lightweight — only 10.6 ounces (300 grams)**
- **Free cloud-based app and PC-based software (software upgrade available)**
- **Available in Class 1 and Class 2**
- **Meets ANSI S1.4:2014 and IEC 61672-1:2013**
- **Multi-language**

Micro USB Type B connection (not shown)

Certifications
CE, UKCA

SoundCHEK sound level meters are supplied in a protective carry case with foam that accommodates the AcoustiCHEK Calibrator. *(Calibrator sold separately – see page 148.)*

Easy, Accurate, and Versatile Sound Level Meter that
MAKES YOUR JOB EASIER!

SoundCHEK Essential — Data Storage/Management Options

CHEKbox

Cloud based via PC

- Free secure starter storage; upgrade to Pro is available
- Powerful employee and exposure database
- Calculators for dose and hearing protection
- Site plans with locations and more

Visit skcCHEKBox.com

DataCHEK / DataCHEK PRO

PC based

- Available as a free download
- Upgrade to Pro for expanded features and analysis
  - Graphical views
  - Analysis for hearing protection
  - Dose calculations

Contact SKC for details

ORDERING

SoundCHEK Essential	Cat. No.	Qty.
SoundCHEK Essential includes **Class 1 meter**, rubber boot, 4 AA batteries, USB cable, wrist strap, windscreen, and USB drive with manual, in a protective carry case C!	702-001	ea
SoundCHEK Essential includes **Class 2 meter**, rubber boot, 4 AA batteries, USB cable, wrist strap, windscreen, and USB drive with manual, in a protective carry case C!	702-002	ea

C! *Requires calibration using AcoustiCHEK calibrator sold separately; see Accessories*

Accessories and Replacement Parts	Cat. No.	Qty.
Replacement Microphone, Class 1, ½-inch pre-polarized 25 mV/Pa electret capsule	702-020	ea
Replacement Microphone, Class 2, ½-inch pre-polarized 25 mV/Pa electret capsule	702-019	ea
Replacement Windscreen, 2.5-inch diameter for ½-inch microphones	702-016	ea
Replacement Pre-amp Assembly for SoundCHEK Essential	702-023	ea
AcoustiCHEK Calibrator, *see p. 148 for details*		
Class 1	703-001	ea
Class 2	703-002	ea

Learn more at skcinc.com/noise!

SoundCHEK Connect

SKC brings wireless connectivity to sound measurement with **SoundCHEK Connect Sound Level Meters.** Perform measurements with one of the easiest-to-use instruments on the market while data stores in your secure cloud account, ready for reporting. SoundCHEK Connect works just as easily in non-wireless environments. SoundCHEK Connect by SKC gives you a direct line to the experts you trust for quality, service, and support.

Cloud-connected Multi-application Sound Level Meters

Choose SKC because your hearing conservation program matters!

- **Intuitive operation**
- **Measures 30 to 140 dB linear and 40 to 143 dB Peak (Class 2)**
- **Dual measurements and time histories**
  - A, C, and Z weighting
  - Slow, Fast, Impulse, and Peak
  - OSHA and UK/EU settings
- **Dual time histories as short as 10 ms**
- **Selectable parameters**
- **Wi-Fi connectivity**
  - Also operates easily in non-wireless environments with direct output to .csv format
- **Models available with modules for 1/1 octave band, statistics and event recording, and 1/1-1/3 octave band**
- **Built-in Hearing Protection Database**
  - New ANSI database
  - OSHA, UK/EU, and custom presets available in exposure and hearing protection databases
- **Large, full-color display**
- **Advanced timers and datalogging**
- **New ability to label measurements with virtual keyboard**
- **Audio files and measurements splittable to custom duration**
- **Voice memo standard on all models**
- **Easy accurate calibration with SKC AcoustiCHEK Calibrator** *(see page 148)*
- **Free cloud data storage**
- **All models available in Class 1 and Class 2**
- **Multi-language**

Certifications
CE, UKCA

Wireless Connectivity and Ease of Use in
Truly Versatile Sound Level Meters

SoundCHEK Connect — Data Storage/Management

CHEKbox

Cloud-based via Wireless

- Free secure starter storage; upgrade available
- Powerful employee and exposure database
- Calculators for dose and hearing protection
- Site plans with locations and more

Visit skcCHEKBox.com

ORDERING

SoundCHEK Connect
Class 2

	Sound Level Meter	Sound Level Meter SO	Sound Level Meter SE	Sound Level Meter SEO
Cat. No.	**702-009**	**702-010**	**702-011**	**702-012**
Parameters: Lp, Leq, Lmax, Lmin, Peak, LE	●	●		
Parameters: Lp, Leq, Lmax, Lmin, Peak, LE, Ltm3, Ltm5, Lday, Levening, Lnight, Ldn, Lden, NA, 10 definable Ln values			●	●
1/1 Octave Module		●		
Statistics and Event Recording Module			●	●
1/1-1/3 Octave Modules				●
Hearing Protector Calculator	●	●	●	●
Meets ANSI S1.4 2014 and IEC 61672-1:2013	●	●	●	●
Wi-Fi Connectivity: Also connects with PC via USB with direct .csv file output	●	●	●	●

All models include meter, rubber boot, 4 AA batteries, USB cable, wrist strap, windscreen, and USB drive with manual, in a protective carry case C1

C1 *Requires calibration using AcoustiCHEK calibrator sold separately; see Accessories*

Accessories and Replacement Parts	Cat. No.	Qty.
Replacement Microphone, Class 2, ½-inch pre-polarized 25 mV/Pa electret capsule	702-019	ea
Replacement Windscreen, 2.5-inch diameter for ½-inch microphones	702-016	ea
Replacement Pre-amp Assembly for SoundCHEK Connect	702-022	ea
AcoustiCHEK Calibrator, *see p. 148 for details*		
Class 1	703-001	ea
Class 2	703-002	ea

Need a Class 1 SoundCHEK Connect? Contact SKC today!

AcoustiCHEK

Acoustic Calibrators for SKC Noise Instruments

The **SKC AcoustiCHEK Calibrator** is specifically designed for easy calibration of the SKC NoiseCHEK Dosimeter and SoundCHEK Essential/SoundCHEK Connect Sound Level Meters with ½-inch microphones. In the lab or in the field, AcoustiCHEK has you covered.

CALIBRATION **MADE EASY!**

- **Easy-to-use interface**
- **Class 1 and Class 2 models available**
  - Selectable outputs of 94 dB, 104 dB, and 114 dB at 1000 Hz
- **70 hours operation on AA alkaline batteries**
  - Auto-off feature
- **Designed for ½-inch microphones**
- **Accurate calibration for SKC sound and noise instruments — *see pages 142-147***
- **Supplied with a Certificate of Manufacturer Calibration**
  - NIST-traceable certificate option available
- **IEC 60942:2017 compliant**

Certifications
CE, UKCA

ORDERING

Description	Cat. No.	Qty.
AcoustiCHEK Calibrator includes AA batteries and Certificate of Manufacturer Calibration		
Class 1, with built-in barometer	703-001	ea
Class 2	703-002	ea

Need your SKC noise instrument factory calibrated? See page 149.

SKC Confidence in Calibration

SKC Noise Instrument Calibration Services

Noise exposure data is only as accurate and defensible as the measuring instrument and its calibration. The SKC Noise Calibration Laboratory offers fast, NIST-traceable calibration of SKC noise instruments. Testing is performed in conformance with ANSI S1.25 and IEC 61252 standards.

- **Class 1 calibration standards**
- **Confirmation of accuracy based on Class 1 and Class 2**
  - SoundCHEK sound level meters
  - NoiseCHEK noise dosimeters
  - SKC microphones
  - AcoustiCHEK calibrators
- **Service includes:**
  - Check of functional components
  - Recalibration
  - Test reports
  - NIST-traceable calibration certificate
- **Trained, dedicated technicians**
- **Fast turnaround time**
- **Competitive pricing**

CONTACT SKC FOR MORE INFORMATION!

HAV-SENTRY

NEW!

A Personal Hand-Arm Vibration Exposure Meter

- Sleek and unobtrusive liner
  - Use underneath protection gloves or without
  - Compatible with most protection gloves
  - Machine washable and easily replaced
- Accelerometer and force sensor for a more comprehensive risk assessment
- IP64 protection – dustproof and water-resistant
- Rechargeable Li-Ion battery for 8 hours continuous operation
- Individually assigned BLE ID tag provides user authentication
- Convenient docking station for charging and data transfer
- Secure cloud-based dashboard
- Complies with ISO 5349 and ISO 8041
- Personalized and non-intrusive monitoring
- Live alerts based on real-time data

Certifications

CE UKCA *Not intrinsically safe*

The Feraru Dynamics HAV-Sentry System is an innovative, non-intrusive wearable technology that provides personalized measurement of real-time hand-arm vibration exposure with live alerts. Proactively protect hand-held tool operators in construction, manufacturing, and other industries from developing lifelong Hand-arm Vibration Syndrome. Access to data visualization, analysis, and risk assessment reports is available in the secure cloud-based dashboard.

Going Beyond Compliance!

The HAV-Sentry System adopts the hand-held adaptor design detailed in the Annex D of BS EN ISO 5349-2:2001. In addition, it measures the gripping forces applied by the operator. No current guidance exists to evaluate this additional factor, but it is recognized as relevant and important to improving vibration risk assessment. The HAV-Sentry Dashboard hosts personalized profiles for each operator where data is stored and used to help inform decisions for worker safety and training.

HAV-SENTRY—The System

Liner Glove
Breathable, moisture wicking, replaceable, comfortable

Aegis HAV Sensing and Alert Unit
Measurement, alert, and control system
The "Traffic Light" alert system for Action Value (amber) and Exposure Limit Value (red); editable to comply with local regulation.

ID Tag
BLE-connected user authentication device
No need to carry the ID Tag once paired with the HAV Sensor!

Docking Station
Charging and data acquisition station
Wi-Fi connection available

Secure Dashboard
Cloud-based data visualization, analysis, and reporting tool

Description		Cat. No.	Qty.
Aegis HAV Sensing and Alert Unit in Liner Glove, Li-Ion battery	Large glove Medium glove	720-001 720-002	ea ea
Docking Station, for Aegis Sensing and Alert Unit, five port		720-003	ea
ID Tag, for use with Aegis Sensing and Alert Unit, Bluetooth		720-004	ea
Replacement Liner Glove, for Aegis Sensing and Alert Unit	Large Medium	720-005 720-006	ea ea
HAV-Sentry Cloud-based Dashboard, per year, *discounts apply for additional users*	1 user	720-010	ea

HAZ-DUST 7204

Personal Particulate Monitoring and Compliance Sampling

The Environmental Devices Corporation (EDC®) personal HAZ-DUST® 7204 provides immediate identification of problem areas and tasks. Quickly implement controls to reduce exposures to hazardous particulate and then measure the effectiveness of controls moving forward. There's no further need for two co-located devices – one HAZ-DUST 7204 with built-in compensating pump and preweighed filter cassette simultaneously provides real-time particulate readout and gravimetric sampling. The HAZ-DUST 7204 alerts users of approaching thresholds for immediate corrective action. Designed carefully with you in mind, the HAZ-DUST 7204 provides cost-savings and the widest range, lowest detection, and best resolution of any personal dust monitor on the market.

Key Features

- **Adjustable pump compensates flow for changes in back pressure, temperature, and atmospheric pressure**
- **Compatible with ISO-validated sampling inlets**
  - Available with new SKC PPI sensor/inlet
- **Accommodates any 25 or 37-mm preweighed filter cassette**
- **Displays real-time measurements in µg/m³ or mg/m³**
- **Easy-to-clean miniaturized optical sensor mounts in the breathing zone**
- **Allows true size-selective sampling with interchangeable inlets**
- **Interchangeable impactors**
- **Allows on-screen programming of libraries for aerosol profiles and data set naming**
- **22+ hours run time with Li-Ion battery**
- **Compact and easy to hold**
- **Optional wireless, BLE, cellular, and networking capabilities**
- **Large color touch display**
- **Real-time rolling graphs**
- **On-screen statistics**
- **In-the-field calibration verification**
- **Loud, bright alarms**

A Solution for Each OSHA-defined Size-selective Region of the Lungs

With interchangeable sampling inlets, the HAZ-DUST 7204 covers all your personal dust monitoring needs. The miniaturized optical sensor/inlet-cassette mounts directly in the breathing zone to effectively provide direct read-out and sampling of respirable, thoracic, or inhalable dust exposure. In addition, interchangeable impactors are available for PM2.5 or PM10.

- **Inhalable -** 2 L/min with IOM,* supplied with monitor
- **Thoracic -** 2 L/min with thoracic impactor, supplied with monitor
- **Respirable -** 2.75 L/min with GS-3 Cyclone*

* *Meets ISO 7708/CEN criteria*

SCAN ME

HAZ-DUST 7204

Simultaneous Direct Readout and Gravimetric Sampling

Benefits

- Immediate display of airborne particulate concentration
- Early warning of approaching threshold limits
- Interchangeable sampling inlets to target compliance sampling of inhalable, thoracic, and respirable size fractions
- Simultaneous compliance sampling
- Gravimetric sample can be used to correct readings for local dust; build and store as an aerosol profile
- Use a single instrument or network multiple instruments with wireless options

PERFORMANCE PROFILE

Sensor: Light scattering
Flow Rate: 1 to 5 L/min, user selectable
Sensing Range: 0.001 to 500 mg/m³ or 1 to 500,000 µg/m³
Measuring Range: Particle sizes from 0.1 to 100 µm
Precision: ± 0.002 mg/m³ or 2 µg/m³
Accuracy: ± 10% to filter gravimetric SAE fine test dust
Calibration: Gravimetric reference NIST-traceable SAE fine test dust (ISO 12103-1 A2 fine test dust)
Display: Concentration in mg/m³ or µg/m³, sampling size fraction of PM (OSHA TWA, AVG, MAX, MIN), date, time, aerosol profiles, data sets, alarm levels, log rate, flow, real-time rolling graph
Dimensions: 4.75 x 3.5 x 2.25 inches (12.1 x 8.9 x 5.7 cm)
Weight: 1.14 lbs (0.52 kg)

APPLICATIONS

Monitoring

- *Silica*
- *Construction dust*
- *Welding fumes*
- *Concrete/cement*
- *Nuisance dusts*
- *Grinding dusts*
- *Soil remediations*
- *Tobacco smoke*
- *Construction dust*
- *Dry chemicals*
- *Diesel*
- *Lead*
- *Wildfires*
- *Pharmaceuticals*
- *Paint spray*
- *Grain*
- *Wood/paper*
- *Cadmium*
- *Chromate*
- *Oil mists*

Description	Cat. No.	Qty.
HAZ-DUST 7204 Monitor Kit includes monitor with battery, 37-mm 2-piece opaque filter cassette, open-face sampling adapter, thoracic sampling inlet, IOM inhalable sampling head *(installed)*, flow adapter, zero accessory, universal battery charger (100-240 V) with adapters, DustComm Pro Software, and manual on USB, and mini-USB download cable, in a hard carry case C!	770-7204	ea
HAZ-DUST 7204 Monitor Kit with PPI Inlet/Sensor includes monitor with battery, PPI (without filter), flow adapter, zero accessory, universal battery charger (100-240 V) with adapters, DustComm Pro Software and manual on USB, and mini-USB download cable, in a hard carry case C!	770-7204P	ea
Size-selective Sampling Heads		
Respirable Sampling Head, GS-3 Cyclone, mounts on HAZ-DUST 7204 sensor, *requires adapter, see below*	225-103	ea
Adapter for Respirable Cyclone, *required when using GS-3 Cyclone*	770-313	ea
Impactors		
Impactor, interchangeable		
10 µm	770-7211	ea
2.5 µm	770-7213	ea
Impactor Sleeve, *required for use with impactors*	770-7210	ea
Recommended Filters		
Quartz Filter, 37 mm, for gravimetric analysis and elemental chemical analysis of carbon-based compounds	225-1822	25
PVC Filter, 37 mm, for economical general gravimetric analysis only	225-5-37	100
Accessories		
Infield Calibration Verification, for verifying span and optical sensor performance	770-327	ea
Calibration Jar, for setting and verifying pump flow rate when using respirable sampling head	225-112	ea
Zeroing Accessory	770-7209	ea
Black Pouch	770-7208	ea

C! *Requires calibration with equipment sold separately; see Accessories*

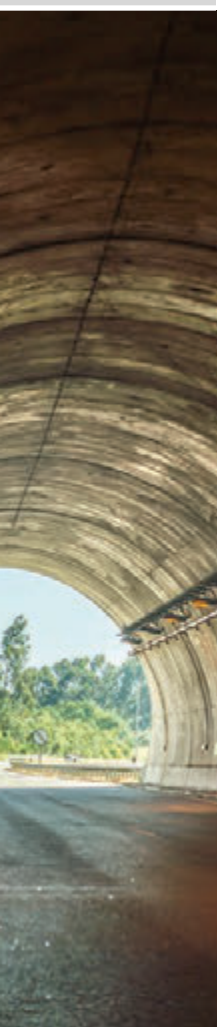
See the SM-7204 Silica Monitor on page 155!

DPM-7204

NEW!

Personal Real-time Diesel Particulate Monitor

- **True dual-purpose wearable monitor**
  - Real-time read-out of DPM concentrations
  - Concurrent filter-based gravimetric sampling according to NIOSH Method 5040
- **Greatest range, lowest detection, and best resolution on the market**
- **Built-in SKC sampling pump compensates flow for back pressure, temperature, and atmospheric pressure**
- **Use with interchangeable ISO-validated respirable, inhalable, PM10, and PM2.5 inlets**
- **Accepts any 25 or 37-mm preweighed and preloaded filter cassette**
- **Large color touch screen for easy navigation**
- **Audible and visual alarms**
- **Ability to create on-screen aerosol profiles and name data sets**
- **Comprehensive real-time rolling graphs**
- **Optional wireless connectivity**
- **Available with new SKC PPI respirable dust sampling inlet**



The Environmental Devices Corp. DPM-7204 real-time monitor is a valuable tool for the OEHS professional. Immediately identify problem areas and tasks at highest risk for exposure to diesel particulate matter (DPM), implement controls, and measure the effectiveness of controls. You no longer need co-located real-time monitors and FRM filter cassettes — DPM-7204 is two instruments in one with its built-in constant flow pump and sensor/filter configuration. The sensor mounts in the breathing zone and is sandwiched between a 25 or 37-mm filter cassette and an interchangeable validated sampling inlet for accurate concurrent real-time measurement and gravimetric sampling of respirable, thoracic, or inhalable particulate size fractions. When used as part of a routine air monitoring program, the DPM-7204 can significantly reduce the number of gravimetric tests and laboratory analyses.

APPLICATIONS

- *NIOSH 5040 sampling*
- *Tier 4 engine studies*
- *Mining ventilation efficiency*
- *Mining applications*
- *Transportation studies*
- *Tunnel monitoring*

PERFORMANCE PROFILE

Sensor: Light scattering
Flow Rate: 1 to 5 L/min
Sensing Range: 0.001 - 500 mg/m^3 or 1 - 500,000 µg/m^3
PM Size Range: : 0.1 to 100 µm
Precision: ± 0.02 mg/m^3; **Accuracy:** ± 10% to filter gravimetric SAE fine test dust
Power/Run-time: Li-Ion battery for 22+ hrs (2 L/min with IOM/no filter)
Datalogging: 43,200 data points; **Communication:** Micro USB
Dimensions/Weight: 3.5 x 2.25 x 4.75 in (8.9 x 5.7 x 12.1 cm); 1.14 lbs (0.52 kg)

Description	Cat. No.	Qty.
DPM-7204 Monitor Kit includes monitor with battery, 37-mm opaque filter cassette, open-faced sampling adapter, GS-3 Cyclone, flow adapter, micro USB download cable, universal battery charger (110-240 V), zeroing accessory, USB with DustComm Pro Software and manual, and certificate of calibration, in a hard carry case C!	770-750A	ea

C! *Requires calibration with equipment sold separately; see Accessories.*

Contact SKC for availability of additional DPM-7204 Kits.

SM-7204 Direct-reading Silica Monitor

Concurrent Real-time Monitoring and Gravimetric Sampling for Compliance

- **Adjustable pump compensates flow for back pressure, temperature, and atmospheric pressure**
- **Compatible with sampling inlets that match the ISO 7708/CEN criteria**
  - Comes standard with GS-3 Cyclone
  - Available with new SKC PPI inlet/sensor
- **Accepts preloaded 25 or 37-mm cassettes**
- **Sensor/filter cassette clips directly in the breathing zone**
- **Easy-to-clean optical sensor**
- **Displays real-time graphing and measurements in µg/m³ or mg/m³**
- **On-screen programming of libraries for aerosol profiles and data set naming**
- **Infield PM calibration and verification**
- **Concurrent filter sampling option for lab analysis, cross-calibration of displayed results, and compliance**
  - Gravimetric filter cassette located directly behind the sensor for maximum particle deposition
- **Datalogging and DustComm Software — download, analyze trends, and produce graphical analysis/comprehensive reports**

The SM-7204 is optimized for measuring silica levels specified in the OSHA Final Silica Rule and calibrated to a known amount of silica dust. Use direct readings for determination of peak silica concentrations for mitigation and lower TWAs. SM-7204 alerts users to approaching thresholds for immediate corrective action. Quickly implement controls and measure effectiveness to reduce further silica exposures. SM-7204 features the ability to collect concurrent gravimetric samples for silica analysis, cross-calibrate, and perform compliance monitoring.

APPLICATIONS

- *Monitoring regulated areas with user-set alarms*
- *Evaluating controls/ worker activities*
- *Recording time history of dust levels*
- *Filter sampling*
- *Monitoring tasks*
- *Selecting PPE*

PERFORMANCE PROFILE

Sensor: Light scattering
Flow Rate: 1 to 5 L/min, user selectable
Sensing Range: 0.001 to 500 mg/m³ (1 to 500,000 µg/m³)
Measuring Range: Particle sizes from 0.1 to 100 µm
Precision: ± 0.002 mg/m³ or 2 µg/m³
Accuracy: ± 10% to filter gravimetric SAE fine test dust
Calibration: ISO 12103-1 A2 fine test dust component with total silica, crystalline analysis of dust by X-ray diffraction - NIOSH Method 7500 and dust analyses gravimetric - NIOSH 7500.

Display: Concentration in mg/m³ or µg/m³, sampling size fraction of PM (OSHA TWA, AVG, MAX, MIN), start and stop time, elapsed run time, log rate, flow, real-time rolling graphs, personalized named data sets, unique aerosol profiles, language options, battery life, pump faults, infield calibration test, history of data sets
Gravimetric Filter Sampling Requirement: 37-mm PVC filter for supplied 37-mm in-line cassette (25-mm filter and cassette options are available)

Description	Cat. No.	Qty.
SM-7204 Silica Monitor Kit includes monitor with battery, 37-mm opaque filter cassette, open-faced sampling adapter, GS-3 Cyclone, flow adapter, micro USB download cable, universal battery charger (110-240 V), zeroing accessory, USB with DustComm Pro Software and manual, and certificate of calibration, in a hard carry case CH	770-700A	ea
SM-7204 Silica Monitor Kit with PPI Inlet/Sensor includes monitor with battery, PPI (without filter), micro USB download cable, universal battery charger (110-240 V), and USB with DustComm Pro Software and manual, in a hard carry case CH	770-700P	ea

CH *Requires calibration with equipment sold separately; see Accessories.*

Acessories and Replacement Parts		
Infield Calibration Verification	770-710A	ea
Calibration Jar, for setting and verifying pump flow rate when using a respirable cyclone	225-112	ea
Replacement Zeroing Filter	770-324A	ea

HAZ-DUST HD-1620

NEW!

Handheld Real-time Respiratory PM Monitor

- **Ability to enter wildfire correction factor**
- **Easy workplace monitoring to meet your state's wildfire smoke regulations**
  - US AQI for PM2.5 is displayed and recorded
- **Monitors multiple air quality parameters**
  - PM mass concentration
  - US AQI for PM2.5 (displayed and recorded)
  - Temperature
  - Relative Humidity
  - Barometric Pressure
  - GPS
  - Particle number count
- **Wireless remote networking for centralized data collection**
  - Optional Wi-Fi, Bluetooth, cellular, and networking capabilities
- **Easy on-site user maintenance and routine servicing**
- **Internal Infield Calibration Verification**
- **Touch screen entry**
- **OSHA TWA, min, max, cumulative average, and STEL and Ceiling alarms**
- **Audible and visual alarms**
- **Interchangeable smart impactors for PM10, PM5.0, PM4.0, PM2.5, PM1.0, and TSP**
  - HD-1620 automatically detects installed impactor
- **Real-time rolling graphical display**
- **Multiple language options**

CE

The Environmental Devices Corporation HD-1620 is a multi-parameter real-time respiratory air monitor designed specifically for firefighters, first responders, and occupational hygienists. Identify health concerns in real-time and get the information you need to set up engineering controls for workers such as N95 masking, SCBA respiratory protection, ventilation controls, evacuation, and/or reentry plans to meet your state's wildfire smoke rule. The HD-1620 is versatile...use it held in your hand, strapped to your hand, clipped to your belt or turn-out gear, or mounted on a tripod. Even with gloves, the large one-button "Go/No Go" provides for easy and rapid deployment. The HD-1620 also complements the EPA PM2.5 and PM10 reference method for outdoor applications to help maintain compliance.

Easily Deployable, Flexible, and Intuitive

Only handheld monitor with built-in US AQI for PM2.5!

APPLICATIONS

- *Smoke and wildfires*
- *Silica*
- *Lead*
- *Pharmaceutical dust*
- *Paint spray*
- *Toxic soil remediation*
- *Chromate*
- *Dry chemicals*
- *Wood dust*
- *Nuisance dust*
- *Heavy metals*
- *Construction dusts*
- *Concrete/cement*
- *Urban AQI monitoring*
- *Office IAQ*
- *Ventilation efficiency*

SCAN ME

Description		Cat. No.	Qty.
HD-1620 Multi-parameter Respiratory Monitor Kit includes monitor, PM2.5 impactor, universal battery charger (100-240 V) with plugs, micro USB cable, flow adapter, PM Air Intake, manual, Dust Comm Pro Software, and certificate of calibration		770-1620	ea
Accessories and Replacement Parts			
Impactors for HD-1620, *require Cat. No. 770-1630, included in Cat. No. 770-1620*	PM10	770-1621	ea
	PM5.0	770-1623	ea
	PM4.0	770-1624	ea
	PM2.5	770-1622	ea
	PM1.0	770-1625	ea
	TSP	770-1626	ea
Impactor Kit for HD-1620 includes impactors for PM10, 5.0, 4.0, 1.0, and TSP and PM Air Intake, *does* ***not*** *include PM2.5 impactor*		770-1629	ea
Stationary Tripod, lightweight, telescopes to 66 inches		770-1627	ea
Table Mount Tripod with gorilla grip, flexible for wrapping around poles, extends 6 inches		770-1628	ea
Replacement PM Air Intake for HD-1620, fits all HD-1620 impactors, *required for use with impactors, included in Cat. No. 770-1620*		770-1630	ea
Flow Adapter for HD-1620, for connection to a flowmeter, *requires Cat. No. 770-1630; does* ***not*** *require a zeroing accessory*		770-1631	ea

EPAM-5000

Direct Readout Plus Filter Sample for EPA PM Criteria

- **Fast, easy setup**
- **Interchangeable impactors**
- **Highly sensitive and accurate**
  - Accuracy is ± 10% filter gravimetric SAE fine dust test
- **Internal 4 L/min sample pump***
- **Unique aerodynamic particle-sizing real-time sensor**
  - Optional EPA FRM-style 47-mm filter cassette for gravimetric reference
- **High correlation to EPA PM10 methods and TEOM**
  - Ideal for saturation sampling
- **Wireless data transmission option transmits data up to 5 miles**
- **Ideal for ambient, environmental, and IAQ investigations and baseline surveys**
- **DustComm Pro data analysis/reporting software included**
- **Wireless network software option available for Windows**
- **Temperature controlled enclosure accessory available**

PERFORMANCE PROFILE

Sensing Range: 0.001 to 20 and/or 0.01 to 200 mg/m³
Particle Size Range: 0.1 to 100 µm
Data Storage: 21,600 data points
Data Display: Concentration in mg/m³ and TWA, MAX, MIN, STEL, date, and time
Run Time: ≥ 24 hours on rechargeable battery; continuous on AC
Dimensions/Weight: 14 x 6 x 10 in (35.6 x 15.2 x 25.4 cm); 10 lbs (4.5 kg)

Description		Cat. No.	Qty.
EPAM-5000 Monitor Kit with impactor (measures TSP without impactor), charger (110-240 V), DustComm Pro Software, computer cable, and manual, in a hard carry case C!	PM10	770-203	ea
	PM2.5	770-202	ea
	PM1.0	770-201	ea
Accessories			
Infield Calibration Verification		770-207	ea
Filter Holder, 47 mm, for gravimetric sampling, *requires filter sold separately, see below*		770-215	ea
Impactors, interchangeable	10 µm	770-206	ea
	2.5 µm	770-205	ea
	1.0 µm	770-204	ea
Filters for Gravimetric Analysis			
PTFE,† with PTFE support, 47 mm, 2.0-µm pore size		225-17-43	100
Glass Fiber, 47 mm, 1.0-µm liquid nominal pore size, binder-free, A/E		225-7047	100
Quartz (Tissuquartz), 47-mm diameter, 432 µm thick		225-1823	25

C! *Requires calibration with equipment sold separately; see Accessories* † *Back pressure on PTFE filters can vary within the same lot.*

* *Pump has a variable flow rate designed for use at 4 L/min to achieve proper size selection.*

Contact SKC for EPAM-5000 optional equipment and accessories, including solar panels.

AIR-AIDE Airborne Particulate Indoor Air Monitor

With Interchangeable PM Size Selectors

- High resolution and temperature stability
- Long-life air sample pump maintains accurate 2 L/min flow for particle separation
- Interchangeable size-selective impactors — choose PM10, PM2.5, PM1.0, or ISO respirable (4.0 µm)
- Built-in calibration factors for fine and coarse particulate matter
- NIST-traceable calibration
- Large data storage capacity
  - Run continuously for up to 15 months without downloading
- On-screen programming of sampling and data storage parameters
- PC-based software included for downloading and graphing stored data
- User-defined audible alarm
- Location codes for tagging data
- Optional wireless data transmission to PC
- Includes PC-based DustComm Pro Software for downloading, basic trend analysis, and comprehensive graphical reporting

PERFORMANCE PROFILE

Sensing Range: 0.001 to 20 mg/m³ (0.01 to 200 mg/m³- optional)

Particle Size Range: 0.1 to 100 µm

Data Storage: 21,600 data points

Data Display: Concentration in mg/m³ and TWA, MAX, MIN, and STEL, date, and time

Run Time: ≥ 10 hrs on rechargeable NiMH battery; continuous on AC

Dimensions/Weight: 3 x 6 x 9 in (7.6 x 15.2 x 23 cm); 5 lbs (2.3 kg)

APPLICATIONS

- *Ventilation system analyzer*
- *"Green Buildings" certification*
- *Survey of workplace compliance*
- *Exposure monitoring of all dusts and aerosols*
- *IAQ for respirable particulates*

Description		Cat. No.	Qty.
AIR-AIDE Monitor Kit includes monitor (0.001 to 20 mg/m³), NiMH battery, charger/adapter (100-240 V), rotameter, impactor sleeve for TSP, DustComm Pro Software, cable, and instruction manual		770-600	ea
Accessories			
Impactor Grease		770-211	ea
Size-selective Impactors	PM10	770-606	ea
	PM2.5	770-605	ea
	PM1.0	770-604	ea
	Respirable (4 µm)	770-603	ea

Wireless data transfer radio modems and other accessories are available. Contact SKC.

HAZ-SCANNER EPAS

Environmental Perimeter Air System

- **Direct reading**
- **Portable — easily deployed**
- **Optional 47-mm FRM-style filter cassette directly adjacent to the sensor for simultaneous gravimetric sampling**
- **Measures/documents trace-level (ppb) gas, particulates, and meteorological parameters in real time to US and EU directives**
  - Configure with up to 14 interchangeable sensors and EPAS-specific meters
  - Can equip to monitor two PM sizes simultaneously
- **Two options to customize your multi-pollutant monitoring station**
  - **Basic Kit** measures CO, NO_2, and PM10; add up to 11 additional sensors/meters
  - **Build Your Own System Kit:** Add up to 14 sensors/meters
  - **Use the checklist on page 161** to configure your EPAS before contacting SKC
  - **Ask an SKC representative about wireless, network, and power options**
- **Wireless networking and datalogging capabilities**
  - Network up to 8 EPAS units to one central PC or Mac; wireless network software option available
- **Operate from battery, AC, or optional solar panel**
- **Easy-to-use graph and reporting software compatible with PC and Mac**
- **Temperature controlled enclosure accessory available**

The portable HAZ-SCANNER® EPAS environmental perimeter air system is easily deployed as a multi-pollutant ambient air quality monitor to scan, measure, and document critical EPA criteria pollutants including nitrogen dioxide, carbon monoxide, sulfur dioxide, ozone, carbon dioxide, particulates, VOCs, and more. The EPAS provides direct readings in real time with datalogging capabilities and concurrent sampling with 47-mm FRM option. The graph and reporting software is compatible with PC and Mac. ***Contact SKC for more information.***

Ordering Information

The HAZ-SCANNER EPAS environmental perimeter air system is a custom item. Build your own system to your specific applications with unique configurations and custom sensor calibrations. **Use the checklist on page 161, and contact SKC today.**

HAZ-SCANNER EPAS

Customize to Monitor High-priority Pollutants

Create a HAZ-SCANNER EPAS to fit your applications. Use the convenient checklist below as a guide to building your EPAS *before* contacting an SKC representative.

Start with:

❑ **EPAS Basic Kit**
- ✓ PM10 or TSP particulates
- ✓ Nitrogen dioxide
- ✓ Carbon monoxide

Cat. No. 770-500K1

Add up to 11 sensors/meters separately at additional cost.

or

❑ **EPAS Build Your Own System Foundation Kit**
Cat. No. 770-500

Add up to 14 sensors/meters separately at additional cost.

Choose 1 additional particulate sensor for Basic Kit *(optional)*. Choose up to 2 for Build Your Own.

❑ PM1.0
❑ PM2.5
❑ PM10

❑ 47-mm FRM-style filter cassette option (requires two PM sensors, both with the 47-mm cassette option). Contact your SKC representative for details.

Choose up to 6 interchangeable gas sensors for Basic Kit *(optional)*. Choose up to 8 for Build Your Own.*

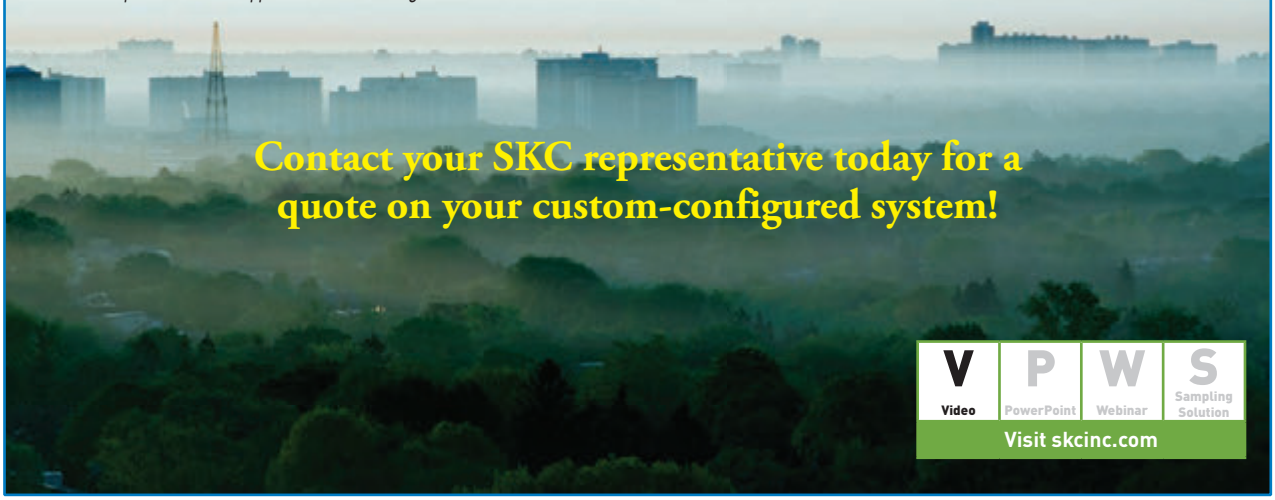
❑ Ammonia (EC)
❑ Carbon dioxide (NDIR)
❑ Carbon monoxide (EC)
❑ Chlorine (EC)
❑ Ethylene oxide (EC)
❑ Hydrocarbon: methane-specific (NDIR)
❑ Hydrocarbons: non-methane (NDIR)
❑ Hydrogen chloride (EC)
❑ Hydrogen cyanide (EC)
❑ Hydrogen sulfide (EC)
❑ Nitric oxide (EC)
❑ Nitrogen dioxide (EC)
❑ NO_x (calculation), requires both NO and NO_2 sensors
❑ Oxygen (EC)
❑ Ozone (EC)
❑ Phosphine (EC)
❑ Sulfur dioxide (EC)
❑ SO_x (calculation), requires both PM2.5 and SO_2 sensors
❑ VOCs (PID)

Choose up to 4 EPAS-specific optional meters or meteorological sensors.*

❑ Temperature and Relative Humidity (NTC and CAP)
❑ Rain gauge (tipping bucket)
❑ Solar radiance (photodiode)
❑ Barometric pressure (piezo resistive)*
❑ Wind speed/direction (3-cup anemometer/vane)
❑ Dew point temperature (software calculation)
❑ Sound/Noise (Type 2 SLM)
❑ Atomic/Nuclear radiation (Geiger counter)

❑ **Choose to add temperature controlled enclosure (-40 to 140 F [-40 to 60 C])**

** Barometric pressure sensor applies toward both the gas sensor count and the meter count.*



SKC SURFACE & DERMAL SAMPLERS

SKC is excited to expand its offering of surface and dermal solutions! Now there are even more products to identify chemical and biological exposures and to help assess PPE effectiveness. Use SKC special decontamination cleansers to safely remove targeted chemicals from skin and surfaces. SKC surface and dermal products are ideal for your dermal exposure reduction programs and aid in take-home hazard prevention and public health investigations.

SCAN ME

MethChek Immunoassay Wipe Kits

Sensitive Kits for ng-Level Detection

- Fast, reliable on-site results
- Indicate meth residue at ≥ 50 nanograms
  - Kits also available for indication at 100, 500, and 1500 nanograms
- Detect presence of meth and provide indication of meth levels
- Save money with multiple-test kits
- No shipping or lab fees
- Lightweight, portable
- Developed by CDC-NIOSH
- Safe for use on many surfaces, including animal fur

1 Wipe

2 Extract

3 Read Results

Positive result with MethChek Kit

Make informed decisions in the field!

MethChek® Kits provide on-the-spot semi-quantitative assessments of meth residue at the lowest state cleanup guideline of 50 ng/100 cm² (100, 500, and 1500-ng sensitivities are also available). Simply wipe, extract, and read results. MethChek is an ideal post-assessment tool to determine the need for further cleaning before sending cleanup crews away.

Complete MethChek Kits

MethChek Kits contain the following:

- Gauze pads or swabs
- Trays
- Templates
- Gloves
- Syringes (except MethChek 50)
- Pipettes
- Reagents
- Detection cartridges
- Bags
- Instructions

Description	µg/100 cm²	Lower Limit of ID ng	Cat. No.	Tests
MethChek 50	0.05	50	**560-004**	**12**
			560-004A	**1**
			560-004B	**3**
MethChek 100	0.1	100	**560-003**	**12**
			560-003A	**1**
			560-003B	**3**
MethChek 500	0.5	500	**560-002**	**12**
			560-002A	**1**
			560-002B	**3**
MethChek 1500	1.5	1500	**560-005**	**12**
			560-005B	**3**

APPLICATIONS

- ***Protect*** *first responders*
- ***Develop*** *health and safety plans for building/environment decontamination*
- ***Confirm*** *appropriate safe levels are met before building occupancy*

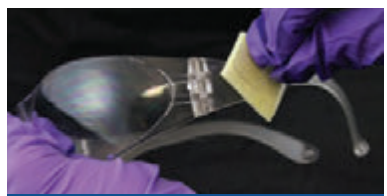
V Video | P PowerPoint | W Webinar | S Sampling Solution

Visit skcinc.com

SURFACE SWYPE

ON-THE-SPOT CHEMICAL SCREENING FOR AT-RISK AREAS

- Suitable for OSHA PPE Standard
- Fast, easy results
- Convenient and safe
  - Use on almost any surface – Skin SWYPEs are available on page 165
- Inexpensive – no instruments or analysis required
- Available for a variety of chemicals with ACGIH® and HSE skin notation
- Ideal for dermal exposure reduction programs



Spray surface and wipe with SWYPE.

Check color.

SKC Recommended CLI by SKC Sampling Products

Compound	Surface SWYPES pk/25, limited shelf-life Require Cleaning/ Developing Solution	Cleaning/Developing Solutions Available in 16 or 22-oz spray bottle or 1-gallon jug as noted	Surface Kits 25 Surface SWYPES and Developing Solution in spray bottle	Hazard Assessment Kits Surface & Skin SWYPES, PERMEA-TEC, Developing Solution, DECONtamination Solution, D-TAM Skin Cleanser *(solution/cleanser varies by hazard)*
Aromatic Amines	769-1021	22 oz 769-1061 1 Gallon 769-1041	769-1021K	769-1001
Aromatic Isocyanates	769-1022	16 oz 769-1062	769-1022K	769-1002
Aliphatic Amines	769-1025	22 oz 769-1065	769-1025K	769-1005
Aliphatic Isocyanates	769-1023	16 oz 769-1062	769-1023K	769-1003
Acid/Base	769-1026	22 oz 769-1066	769-1026K	769-1006
Phenols	769-1027	16 oz 769-1067	769-1027K	769-1007
Nickel	769-1028	22 oz 769-1068 1 Gallon 769-1054	769-1028K	769-1008
o-Phthalaldehyde	769-1029	22 oz 769-1069 1 Gallon 769-1055	769-1029K	769-1009
Hexavalent Chromium NEW!	769-1030	22 oz 769-1070	------	------

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SCAN ME

COMING SOON!
SWYPES for Lithium, Beryllium, and Lead

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DECON Kits for aromatic amines and isocyanates are available at skcinc.com.

CHEMICAL EXPOSURE INDICATORS

SKIN SWYPE

CLI by SKC Skin SWYPE indicators provide simple, fast, and visible proof of chemical exposure on skin that may have come into contact with contaminated surfaces. Skin SWYPEs identify work practices that may result in exposure, educate workers about prevention, and reinforce safe work practices. Use in conjunction with Surface SWYPE indicators to identify at-risk areas for housekeeping.

- **Fast, easy, on-the-spot results**
- **Convenient and safe**
- **Designed for use on skin – Surface SWYPEs are available on page 164**
- **Inexpensive – no instruments or analysis required**
- **Available for a variety of chemicals with ACGIH and HSE skin notation**
- **Ideal for dermal exposure reduction programs**

Wipe skin with SWYPE.

Develop SWYPE in solution.

SKC Recommended CLI by SKC Sampling Products

Compound	Skin SWYPES pk/20, limited shelf-life Include 20 plastic cups Require Cleaning/ Developing Solution	Cleaning/Developing Solutions Available in 16 or 22-oz spray bottle or 1-gallon jug as noted	Skin Kits 20 Skin SWYPES, 20 plastic cups, and Developing Solution in spray bottle	Hazard Assessment Kits Surface & Skin SWYPES, PERMEA-TEC, Developing Solution, DECONtamination Solution, D-TAM Skin Cleanser (*solution/cleanser varies by hazard*)
Aromatic Amines	769-1031	22 oz 769-1061 1 Gallon 769-1041	769-1031K	769-1001
Aromatic Isocyanates	769-1032	16 oz 769-1062	769-1032K	769-1002
Aliphatic Amines	769-1035	22 oz 769-1065	769-1035K	769-1005
Aliphatic Isocyanates	769-1033	16 oz 769-1062	769-1033K	769-1003
Acid/Base	769-1036	22 oz 769-1066	769-1036K	769-1006
Phenols	769-1037	16 oz 769-1067	769-1037K	769-1007
Nickel	769-1038	22 oz 769-1068 1 Gallon 769-1054	769-1038K	769-1008
o-Phthalaldehyde	769-1039	22 oz 769-1069 1 Gallon 769-1055	769-1039K	769-1009

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PPE Breakthrough Testing

Multiple Contaminants

PERMEA-TEC

BREAKTHROUGH DETECTION FOR GLOVES/PROTECTIVE CLOTHING

- Suitable for OSHA PPE Standard and dermal exposure reduction programs
- Test during field use, get on-the-spot results
- Convenient and safe — Just like wearing a flexible adhesive bandage
- Inexpensive — No instruments or analysis required
- Available for a variety of chemicals with ACGIH and HSE sensitizer notations

Toxic chemicals can permeate protective clothing, especially gloves that are subject to repeated flexing, stretching, pressure, and abrasion. In addition, variations in chemical resistance and work with chemical mixtures can make selecting protective equipment challenging. CLI by SKC PERMEA-TEC Sensors look like small adhesive bandages, but the pad (sensor) is on the outside and adheres easily to worker hands before gloving. The color change on PERMEA-TEC shows when and where breakthrough actually occurs and enables safety professionals to select the glove or other PPE best suited for protection, employee acceptance, and cost-effectiveness.

Pre-exposure

Adhered and ready for gloving

Post-exposure

Compound	PERMEA-TEC Sensors pk/20 Some models require Cleaning/Developing Solution	Cleaning/Developing Solutions Available in 16 or 22-oz spray bottle or 1-gallon jug as noted	Hazard Assessment Kits Surface & Skin SWYPES, PERMEA-TEC, Developing Solution, DECONtamination Solution, D-TAM Skin Cleanser *(solution/cleanser varies by hazard)*
Aromatic Amines	769-3001	22 oz 769-1061 1 Gallon 769-1041	769-1001
Aromatic Isocyanates	769-3002	------	769-1002
Aliphatic Amines	769-3005	------	769-1005
Aliphatic Isocyanates	769-3003	------	769-1003
Acid/Base	769-3006	------	769-1006
Phenols	769-3007	16 oz 769-1067	769-1007
Nickel	769-3008	22 oz 769-1068 1 Gallon 769-1054	769-1008
o-Phthalaldehyde	769-3009	22 oz 769-1069 1 Gallon 769-1055	769-1009
Solvents	769-3050 In addition to color change for polar compounds, PERMEA-TEC for Solvents each contain a charcoal pad that can be desorbed and analyzed by GC to identify solvents.		

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D-TAM SKIN CLEANSERS

- **Skin-friendly, even with frequent use — No water, lanolin, aloe vera, alcohol, pumice, or harsh surfactants**
- **Do not enhance penetration of contaminants into skin**
- **Remove aromatic amines (MDA, TDA, MOCA, aniline, o-toluidine, and more), isocyanates and urethanes, pesticides, phenols, epoxy resins, paints, and sealants**

CLI by SKC D-TAM Skin Cleansers play an integral role in safety and health programs. Specially formulated with high molecular weight ingredients, D-TAM Skin Cleansers safely and effectively remove slightly water-soluble and lipophilic (water insoluble) chemicals used with solvents. Unlike other cleansers, D-TAM will not penetrate or degrade the skin's natural lipid barrier or cause dryness and irritation — things that make skin more susceptible to chemical permeation of the skin. SKC offers D-TAM Skin Cleansers for both semipolar and very nonpolar chemicals.

D-TAM: Removes many intermediate polarity chemicals such as phenol, dinitrotoluene, benzene, malathion, nitroaniline, toluene, captan, MDA, and more

D-TAM Gold: Removes many very nonpolar compounds such as pentachlorophenol, MDI, PCBs, and more

Which Skin Cleanser should I use?

Use the table below to select the optimal cleanser to remove chemical contamination from skin.

Skin Decontamination Selection Guide

Chemical	Log K_{ow}	Water	D-TAM	D-TAM Gold
Dimethylformamide	-1.01	x		
Methanol	-0.77	x		
Acetonitrile	0.34	x		
Acrylic acid	0.35	x		
Benzene	2.13		x	
Toluene	2.73		x	
1,1,2,2 Tetrachloroethane	2.93		x	
Cyclohexane	3.44		x	
Hexane	3.90			x

See more on D-TAM!

SCAN ME

What is Log K_{ow}?

Log K_{ow} is "Octanol/Water Partition Coefficient." This is the ratio of the concentration of a solute between water and octanol (a well-known property) commonly used as a measure of the relationship between lipophilicity (fat solubility) and hydrophilicity (water solubility) of a substance. If the value in the Log K_{ow} column in the table above is greater than 1, it is a substance more soluble in fat-like solvents, such as n-octanol, and requires a cleanser containing a formulation that successfully removes such substances. Substances with a value less than 1 are soluble in water.

Soluble in Water < 1 Log K_{ow} | 1 Log K_{ow} | **Soluble in Fat** > 1 Log K_{ow}

Ordering

Qty.	D-TAM	D-TAM Gold
8-oz personal size	769-5011	769-5021
1-gallon jug with pump dispenser	769-5001	769-5002

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DECONtamination SURFACE SOLUTIONS

ABOUT

Decontamination

OSHA offers a helpful online resource on removal or neutralization of contaminants that have accumulated on personnel and equipment. This web page includes information on plan development, contamination identification and prevention, decontamination methods, chemical removal, decontamination effectiveness testing, recommended equipment, and more. *Visit www.osha.gov/hazardous-waste/decontamination.*

• TECH TIPS •

- Decontamination is performed to protect health and safety.
- Before using a decontamination method, determine compatibility of the method with substances being removed (reactivity) or with clothing/equipment being decontaminated (permeation or degradation of protectiveness).
- Consider possible direct health hazards to workers (the vapors from some chemical decontamination solutions may be harmful if inhaled or are flammable). Consult the solution's SDS.
- SKC DECONtamination Solutions are made of biodegradable materials and manufactured to be safe for most surfaces. *Learn more at www.skcinc.com/surface-dermal.*

- **Made of biodegradable materials**
- **Safely clean isocyanates, aromatic amines, and hexavalent chromium from most surfaces**
- **In-place decontamination of process areas saves time and money**
- **Help to reduce the risk of dermal and inhalation exposures**
- **Ideal for use after detection with Surface SWYPE indicators, *see page 164***

CLI by SKC DECONtamination Solutions are an important follow-up element in housekeeping and dermal exposure reduction programs. For best results, use Surface SWYPE Indicators *(see page 164)* to test surfaces for chemical contamination. Once a hazard is detected, use the appropriate DECONtamination Solution to remove contamination safely and effectively. Again, use Surface SWYPE indicators to test the decontaminated surfaces for verification of cleaning efficiency.

SCAN ME

Available in 1-gallon jugs for big jobs like spill cleanup

Available in convenient 22-oz spray bottle for everyday use

NEW!

Ordering

Qty.	Aromatic Amines	Isocyanates	Hexavalent Chromium
22-oz spray bottle	**769-1071**	**769-1072**	**769-1074**
1-gallon jug	**769-1051**	**769-1052**	------

Convenient Spill DECON and Test Kits are available!

One kit provides the Surface SWYPE Indicators, Developing Solution, and DECONtamination Solution you need to effectively clean up surfaces contaminated by spills. Available for Aromatic Amines and Isocyanates. Ask your SKC representative for details.

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FULL DISCLOSURE

Instant Detection of Lead on Skin and Surfaces

- **Completely safe surface and skin testing**
  - Reagents never touch the test surface
  - Testing skin allows direct evaluation of lead exposure
  - Suitable for testing both flat and irregular surfaces
- **Immediate color change — instant results**
  - Identifies lead contamination at ≥ 18 µg
  - Wipes can be sent to a lab for quantitative results
- **Easy to use**
- **Developed and tested by CDC-NIOSH**
- **Meets NIOSH Method 9105 for Lead in Dust Wipes**

Full Disclosure® wipe sampling provides instant and safe detection of lead on skin and surfaces. Unlike other lead sampling methods, Full Disclosure is completely safe because no chemical touches the test site. Each kit contains everything needed to detect lead at or above 18 µg on skin and surfaces. Use Full Disclosure to modify worker cleaning behavior by spot-checking surfaces and check worker skin after surface and hand cleaning. If red, clean it again! Ensure your workers go home with no lead contamination.

Description	Cat. No.	Qty.
Full Disclosure Kit†# includes 11 pairs nitrile gloves, 10 wipes,‡ Disclosing Powder, extraction solution, deionized water, 10 sheets of waxed paper, and instructions	**550-001**	**ea**
Full Disclosure Kit# for Quantitative Analysis† includes all items in above kit, 10 sample collection bottles with labels, and 10 disposable templates	**550-002**	**ea**

† Not designed for detecting lead in paint and paint chips, on painted surfaces, or embedded in material such as plastic; not suitable for lead chromate
‡ Wipes conform to ASTM E1792.
 # Limited shelf-life

For more information, visit skcinc.com.

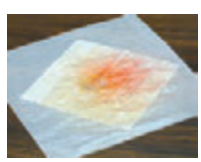
Three Easy Steps to Full Disclosure of Lead

Step 1
Prepare the Solution

Step 2
Wipe to Sample

Step 3
Spray and Read Results

Yellow to Orange = lead < 18 µg



Pink to Red = lead ≥ 18 µg

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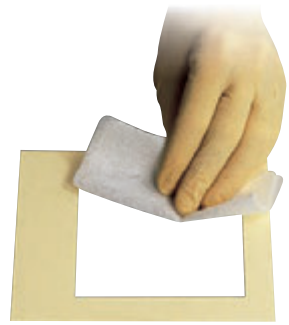
Ghost Wipes

Sample Metals on Surfaces



- **Robust for wiping even rough surfaces**
- **Readily and completely digested in hot water or acid solution**
- **Meet specifications for sampling lead and beryllium**
  - All ASTM E1792 specifications as required by US EPA
  - AIHA policy on sampling materials for lead in surface dust
  - OSHA Method ID-125G, Addendum B
  - ASTM D7707 for beryllium
  - NIOSH 9102 Elements on Wipes
  - NIOSH 9100 Lead in Surface Wipe Samples

Data Interpretation

Lead on Surfaces

- According to the US EPA, lead in dust is considered a hazard at surface levels of:
  - *10 µg/ft² on floors*
  - *100 µg/ft² on windowsills*

Source: EPA Review of the Dust-Lead Hazard Standards and the Definition of Lead-Based Paint-Final Rule (July 9, 2019 Federal Register-Vol. 84, No. 131)

Robust Ghost Wipes hold together even when used on the roughest surfaces. In the lab, Ghost Wipes readily and completely dissolve during digestion for maximum recovery of target analyte(s). Ghost Wipes earn their name by dissolving so completely that there is no messy fibrous material to clog the sample uptake capillary or nebulizer. The Wipe Sample Test Kit below contains Ghost Wipes.

Description	Cat. No.	Qty.
Ghost Wipes, moistened with deionized water, individually sealed packets, *require 10 x 10-cm templates*	225-2414 225-2413	200 1000
Templates		
Disposable manila paper, 10 x 10 cm	225-2415 225-2415A	250 10
Disposable manila paper, 1 x 1 foot	225-2416 225-2416A	250 10

Smear Tabs

- **Low ash**
- **Specified in OSHA Methods 5003, ID-121, ID-125G, and ID-206 for wipe sampling of metals**

SKC high-quality, low-ash acid-hardened paper Smear Tabs are designed for efficient collection of samples from surfaces where dust and chemicals have settled.

Description	Cat. No.	Qty.
Smear Tabs	225-24	100
Templates		
Disposable manila paper, 10 x 10 cm	225-2415 225-2415A	250 10

• TECH TIPS •

- When placing smear tabs in a vial, insert with the tab end out.
- Use clean, non-powdered disposable gloves to handle smear tabs.
- Use a 10 x 10-cm template when precise determination of the contaminant loading (concentration) is desired or as required by the method used.

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For metal in air determinations using NIOSH 7306, see page 101 for Solu-CAPs.

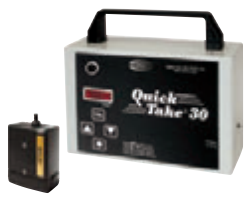
Microvacuum Cassettes for Surface Sampling

Efficient Collection of Asbestos or Fungal Spores

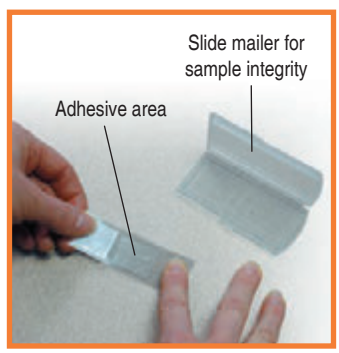
- **Nozzle for easy sampling on irregular surfaces/carpeting**
- **Collect contaminants in settled dust using a sample pump**
  - 2 L/min for sampling asbestos
  - 10 L/min for sampling fungal spores

SKC Microvacuum Cassettes with microvacuum nozzle are ideal for collecting asbestos or fungal spores from carpets and other dusty surfaces. SKC Microvacuum Cassettes are available with MCE filter for sampling asbestos in settled dust on surfaces or with polycarbonate filter for sampling fungal spores from carpeting or other surfaces.

Microvacuum Cassettes for Asbestos or Fungal Spores				
Dia. (mm)	**Filter Specifications**	**Cassette Description**	**Cat. No.**	**Qty.**
25	0.45 µm MCE, BestChek, for TEM analysis, asbestos	Carbon-filled polypropylene with cowl and nozzle	**225-322**	**ea**
37	0.45 µm MCE, for TEM analysis, asbestos	Styrene (non-conductive) with nozzle	**225-9543**	**ea**
37	0.4 µm polycarbonate for fungal spores	Styrene (non-conductive) with nozzle	**225-9542**	**ea**
Templates		**Disposable manila paper,** 10 x 10 cm	**225-2415**	**250**
			225-2415A	**10**
		Disposable manila paper, 1 x 1 foot	**225-2416**	**250**
			225-2416A	**10**
Carpet Sampling Kit for Fungal Spores includes 10 microvacuum carpet cassettes Cat. No. 225-9542, 10 x 10-cm disposable templates, Luer adapters, zip bags, and labels			**225-9540**	**ea**



Sample Pumps
see pages 28-29, and 31



Stick-to-it Lift Tape

- Easy-to-use, inexpensive slides
- Consistent sample area for better data interpretation
- Flexible plastic for sampling irregular surfaces
- Individually serialized for sample identification
- Suitable for collecting pollen or fibers from surfaces, insulation, etc.

Stick-to-it flexible plastic microscope slides feature an adhesive area for easy sampling. Identify the sample area, press slide adhesive to the surface, place slide in provided mailer, and send to a laboratory for analysis.

Cat. No. 225-9808.....Qty/10
Cat. No. 225-9809.....Qty/50

Quantity discounts may be available! Contact your SKC distributor.

Sterile Surface Swab Kit

For Biological Sampling

The Surface Swab Kit is ideal for determining the relative degree and type of biological contamination in an area. This non-destructive method can be used safely on most surfaces including irregular areas such as air return grills. The inert, non-toxic rayon tip permits good sample retrieval and adsorption. Each kit includes 10 sterile swabs in transport tubes and 10 templates (5 x 10 cm).

Description	Cat. No.	Qty.
Surface Swab Kit*	225-2402	ea
Surface Swabs Only*	225-2400	50

* *Limited shelf-life*

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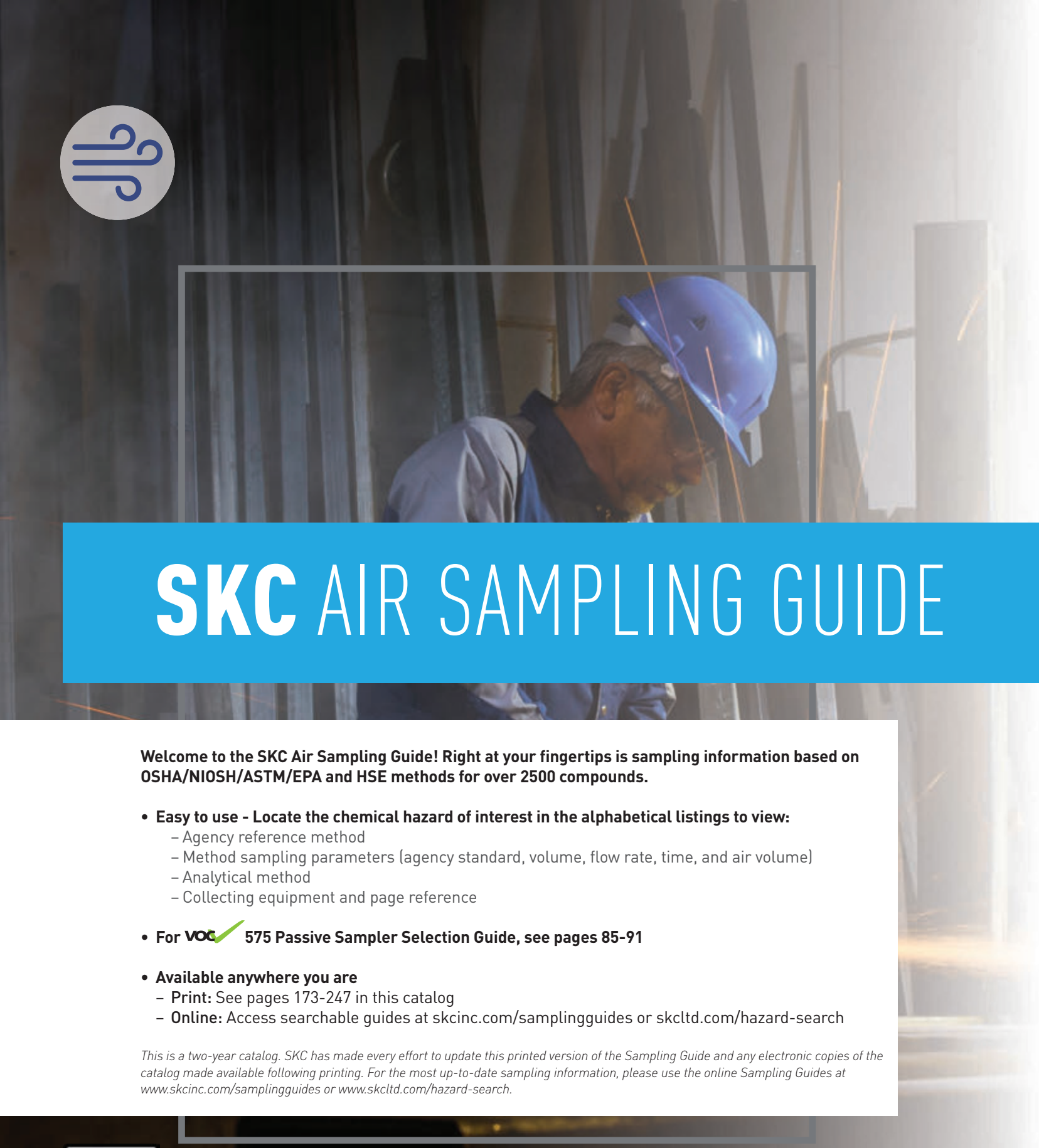

SKC AIR SAMPLING GUIDE

Welcome to the SKC Air Sampling Guide! Right at your fingertips is sampling information based on OSHA/NIOSH/ASTM/EPA and HSE methods for over 2500 compounds.

- **Easy to use - Locate the chemical hazard of interest in the alphabetical listings to view:**
  - Agency reference method
  - Method sampling parameters (agency standard, volume, flow rate, time, and air volume)
  - Analytical method
  - Collecting equipment and page reference

- **For VOC 575 Passive Sampler Selection Guide, see pages 85-91**

- **Available anywhere you are**
  - **Print:** See pages 173-247 in this catalog
  - **Online:** Access searchable guides at skcinc.com/samplingguides or skcltd.com/hazard-search

This is a two-year catalog. SKC has made every effort to update this printed version of the Sampling Guide and any electronic copies of the catalog made available following printing. For the most up-to-date sampling information, please use the online Sampling Guides at www.skcinc.com/samplingguides or www.skcltd.com/hazard-search.

SCAN ME

Introduction

This guide includes most hazardous substances, including their current Workplace Exposure Limits at the time of printing (where applicable). For the most up-to-date version of this guide, please visit our website at www.skcltd.com. For a full list of Workplace Exposure Limits, please consult EH40, available from HSE books or www.hse.gov.uk. This guide should not be used as an alternative to obtaining a copy of EH40 and reading the full supplementary data it contains.

The following statements are taken directly from EH40 Workplace Exposure Limits.

Workplace Exposure Limits (WELs)

WELs are British occupational exposure limits and are set in order to help protect the health of workers. WELs are concentrations of hazardous substances in the air, averaged over a specified period of time, referred to as a time-weighted average (TWA). Two time periods are used: long-term (**8 hours**) and short-term (**15 minutes**).

Short-term exposure limits (STELs) are set to help prevent effects such as eye irritation, which may occur following exposure for a few minutes.

WELs and the Control of Substances Hazardous to Health Regulations 2002 (COSHH)

Substances that have been assigned a WEL are subject to the requirements of COSHH. These regulations require employers to prevent or control exposure to hazardous substances. For further information, go to www.hse.gov.uk/coshh. Under COSHH, control is defined as adequate only if a) the principles of good control practice are applied, b) any WEL is not exceeded, and c) exposure to asthmagens, carcinogens, and mutagens are reduced as low as is reasonably practicable.

The absence of a substance from the list of WELs does not indicate that it is safe. For these substances, exposure should be controlled to a level to which nearly all the working population could be exposed, day after day at work, without any adverse effects on health.

As part of the assessment required under regulation 6 of COSHH, employers should determine their own working practices and in-house standards for control of exposure. In some cases, there may be sufficient information available for employers to set an 'in-house' working standard, e.g., from manufacturers and suppliers of the substances, publications of industry associations, occupational medicine and hygiene journals, and other agencies such as NIOSH and OSHA.

		SAMPLING†									
		WEL		Vol. (liter)		Rate (ml/min)		Time		Analytical Method	SKC Collecting Equipment and Page No.
Chemical Hazard	Agency Reference	TWA (ppm)	STEL• (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)		
Acetaldehyde	MDHS 102	20 ppm (37 mg/m³)	50 ppm (92 mg/m³)	48-480	1.5-15	100-1000	100-1000	8	15	HPLC-PDA	ST 226-119 or ST 226-120 50
Acetaldehyde	MDHS 102	20 ppm (37 mg/m³)	50 ppm (92 mg/m³)	diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS 500-100 92
Acetic acid	MDHS 104 §	10 ppm (25 mg/m³)	20 ppm (50 mg/m³)	Up to 96	Up to 3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Acetone	MDHS 104	500 pm (1210 mg/m³)	1500 ppm (3620 mg/m³)	1-1.5	1-1.5	20-100	20-100	1.25	15	GC-FID, GC-MS	ST 226-358 52
Acetone	MDHS 104 §	500 pm (1210 mg/m³)	1500 ppm (3620 mg/m³)	0.5-3	0.5-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Acetone	MDHS 88 ¥	500 pm (1210 mg/m³)	1500 ppm (3620 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Acetonitrile	MDHS 104 §	40 ppm (68 mg/m³)	60 ppm (102 mg/m³)	1-25	1-15	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-09 48
Acetonitrile	MDHS 88 ¥	40 ppm (68 mg/m³)	60 ppm (102 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Acrylamide	MDHS 57/2 Δ	0.1 mg/m³		48		100		8		HPLC-UV	IMP 225-36-1 70 IT 225-22 70
Acrylonitrile	MDHS 96	2 ppm (4.4 mg/m³)		3.5-20		10-200		Up to 8		GC-FID	ST 226-01 48
Acrylonitrile	MDHS 88 ¥	2 ppm (4.4 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Allyl alcohol	MDHS 104 §	2 ppm (4.8 mg/m³)	4 ppm (9.7 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Allyl alcohol	MDHS 88 ¥	2 ppm (4.8 mg/m³)	4 ppm (9.7 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Aluminium metal (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Aluminium metal (inhalable dust)	ISO 15202:2020	10 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Aluminium metal (respirable dust)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Aluminium metal (respirable dust)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Aluminium metal (respirable dust)	ISO 15202:2020	4 mg/m³		1440		3000		8		ICP-AES	CYC 225-69 124 FLT 225-1930 100
Aluminium metal (respirable dust)	ISO 15202:2020	4 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100 FOAM 225-772 121
Aluminium oxides (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Aluminium oxides (inhalable dust)	ISO 15202:2020	10 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Aluminium oxides (respirable dust)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Aluminium oxides (respirable dust)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Aluminium oxides (respirable dust)	ISO 15202:2020	4 mg/m³		1440		3000		8		ICP-AES	CYC 225-69 124 FLT 225-1930 100

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING† WEL TWA (ppm)	WEL STEL• (ppm)	Vol. (liter) TWA	Vol. (liter) STEL	Rate (ml/min) TWA	Rate (ml/min) STEL	Time TWA (hr)	Time STEL (min)	Analytical Method	SKC Collecting Equipment and Page No.
Aluminium oxides (respirable dust)	ISO 15202:2020	4 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100 FOAM 225-772 121
Aluminium salts (soluble)	ISO 15202:2020	2 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Amines, aromatic *(see individual compounds)*	MDHS 75/2			200		2000		Up to 8		HPLC-UV	IOM 225-70A 121 FLT 225-58F‡ 108 ST 226-35 48
2-Aminoethanol	MDHS 96	1 ppm (2.5 mg/m³)	3 ppm (7.6 mg/m³)	4-24	4-24	10-200	10-200	Up to 8	15	GC-FID	ST 226-10-04 48
Aniline (Phenylamine)	MDHS 104 §	1 ppm (4 mg/m³)		5-30		20-200		Up to 8		GC-FID, GC-MS	ST 226-10 48
Aniline (Phenylamine)	MDHS 104	1 ppm (4 mg/m³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-357 52
Aniline (Phenylamine)	MDHS 75/2	1 ppm (4 mg/m³)		200		2000		Up to 8		HPLC-UV	IOM 225-70A 121 FLT 225-58F‡ 108
p-Antimony & compounds (except stibine) (as Sb)	ISO 15202:2020	0.5 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
p-Aramid respirable fibres (Polymeric aromatic amide derivative)	MDHS 59/2	0.5 fibres/ml		480		1000		8		PCM	FLT/CL 225-54A or FLT/CL 225-54 or FLT 225-1913 100
Aromatic carboxylic acid anhydrides (ACAs) *(see individual compounds)*	MDHS 62/2			960		2000		8		HPLC-UV	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Arsenic & arsenic compounds (except arsine) (as As)	ISO 15202:2020	0.1 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Asbestos	HSG 248	0.1 fibre/cm³	0.6 fibre/cm³	240-480	40	1000-2000	4000	2-4	10	PCM	FLT/CL 225-54A or FLT/CL 225-54 or FLT 225-1913 100
Azodicarbonamide	MDHS 92/2	1.0 mg/m³	3.0 mg/m³	960	30	2000	2000	8	15	HPLC	IOM 225-70A 121 FLT 225-58F 108
Barium compounds (soluble) (as Ba)	ISO 15202:2020	0.5 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Barium sulphate (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Barium sulphate (inhalable dust)	ISO 15202:2020	10 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Barium sulphate (respirable dust)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Barium sulphate (respirable dust)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Barium sulphate (respirable dust)	ISO 15202:2020	4 mg/m³		1440		3000		8		ICP-AES	CYC 225-69 124 FLT 225-1930 100
Barium sulphate (respirable dust)	ISO 15202:2020	4 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100 FOAM 225-772 121
Benzaldehyde	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST 226-119 50 ST 226-120 50
Benzaldehyde	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS 500-100 92
Benzene	MDHS 104 §	1 ppm (3.25mg/m³)		5-30		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
Benzene	MDHS 104	1 ppm (3.25mg/m³)		1-6.2		20-100		Up to 2		GC-FID, GC-MS	ST 226-357 52
Benzene	MDHS 104	1 ppm (3.25mg/m³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-358 52
Benzene	MDHS 88 ¥	1 ppm (3.25mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Benzyl chloride	MDHS 104 §	0.5 ppm (2.6 mg/m³)	1.5 ppm (7.9 mg/m³)	6-50	Up to 3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Benzyl chloride	MDHS 88 ¥	0.5 ppm (2.6 mg/m³)	1.5 ppm (7.9 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Bifenthrin	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Bis-(2-Ethylhexyl) phthalate (diOctyl phthalate)	MDHS 104 §	5 mg/m³	10 mg/m³	240		1000		4		GC-FID, GC-MS	ST 226-56 49
Bornan-2-one (Camphor, synthetic)	MDHS 104 §	2 ppm (13 mg/m³)	3 ppm (19 mg/m³)	1-25	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Bornan-2-one (Camphor, synthetic)	MDHS 88 ¥	2 ppm (13 mg/m³)	3 ppm (19 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Bromoethylene	MDHS 96	1 ppm (4.4 mg/m³)		2-10		10-200		Up to 8		GC-FID	ST 226-09 48
Bromomethane (Methyl bromide)	MDHS 88 ¥	5 ppm (20 mg/m³)	15 ppm (59 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Bromopropylate	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Bupirimate	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Buta-1,3-diene (1,3-Butadiene)	MDHS 104	1 ppm (2.2 mg/m³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-363 52
Buta-1,3-diene (1,3-Butadiene)	MDHS 104 §	1 ppm (2.2 mg/m³)		5-25		20-200		Up to 8		GC-FID, GC-MS	ST 226-37 49
Buta-1,3-diene (1,3-Butadiene)	MDHS 53/2	1 ppm (2.2 mg/m³)		2-5		10-200		Up to 8		GC-FID, GC-MS	ST 226-363 52
Butan-1-ol (n-Butanol; n-Butyl alcohol)	MDHS 104 §		50 ppm (154 mg/m³)	2-10	2-10	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Butan-1-ol (n-Butanol; n-Butyl alcohol)	MDHS 104		50 ppm (154 mg/m³)	1-5	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 or ST 226-358 52

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING† WEL TWA (ppm)	WEL STEL• (ppm)	Vol. (liter) TWA	Vol. (liter) STEL	Rate (ml/min) TWA	Rate (ml/min) STEL	Time TWA (hr)	Time STEL (min)	Analytical Method	SKC Collecting Equipment and Page No.
Butan-1-ol (n-Butanol; n-Butyl alcohol)	MDHS 88 ¥		50 ppm (154 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Butan-2-ol (2-Butanol; sec-Butanol; sec-Butyl alcohol)	MDHS 88 ¥	100 ppm (308 mg/m³)	150 ppm (462 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Butan-2-ol (2-Butanol; sec-Butanol; sec-Butyl alcohol)	MDHS 104 §	100 ppm (308 mg/m³)	150 ppm (462 mg/m³)	2-10	2-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Butan-2-one (Methyl ethyl ketone; MEK)	MDHS 104	200 ppm (600 mg/m³)	300 ppm (899 mg/m³)	1-3.2	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
Butan-2-one (Methyl ethyl ketone; MEK)	MDHS 104	200 ppm (600 mg/m³)	300 ppm (899 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358 52
Butan-2-one (Methyl ethyl ketone; MEK)	MDHS 88 ¥	200 ppm (600 mg/m³)	300 ppm (899 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
2-(2-Butoxyethoxy)ethanol (Butyl carbitol)	MDHS 104 §	10 ppm (67.5 mg/m³)	15 ppm (101.2 mg/m³)	10		200		50 min		GC-FID, GC-MS	ST 226-01 48
2-Butoxyethanol (Butyl Cellosolve)	MDHS 104 §	25 ppm (123 mg/m³)	50 ppm (246 mg/m³)	5-25	Up to 3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
2-Butoxyethanol (Butyl Cellosolve)	MDHS 104	25 ppm (123 mg/m³)	50 ppm (246 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
2-Butoxyethanol (Butyl Cellosolve)	MDHS 88 ¥	25 ppm (123 mg/m³)	50 ppm (246 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
n-Butoxyethyl acetate (n-Butoxyethanol acetate; Butyl Cellosolve acetate)	MDHS 104	20 ppm (133 mg/m³)	50 ppm (332 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
n-Butoxyethyl acetate (n-Butoxyethanol acetate; Butyl Cellosolve acetate)	MDHS 104 §	20 ppm (133 mg/m³)	50 ppm (332 mg/m³)	48	15	100	1000	8	15	GC-FID, GC-MS	ST 226-01 48
n-Butoxyethyl acetate (n-Butoxyethanol acetate; Butyl Cellosolve acetate)	MDHS 88 ¥	20 ppm (133 mg/m³)	50 ppm (332 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Butyl acetate (n-Butyl acetate)	MDHS 104	150 ppm (724 mg/m³)	200 ppm (966 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 or ST 226-358 52
Butyl acetate (n-Butyl acetate)	MDHS 104 §	150 ppm (724 mg/m³)	200 ppm (966 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Butyl acetate (n-Butyl acetate)	MDHS 88 ¥	150 ppm (724 mg/m³)	200 ppm (966 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
sec-Butyl acetate	MDHS 88 ¥	200 ppm (966 mg/m³)	250 ppm (1210 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
sec-Butyl acetate	MDHS 104 §	200 ppm (966 mg/m³)	250 ppm (1210 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
tert-Butyl acetate(1,1-dimethylethyl ester)	MDHS 104	200 ppm (966 mg/m³)	250 ppm (1210 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358 52
tert-Butyl acetate (1,1-dimethylethyl ester)	MDHS 104 §	200 ppm (966 mg/m³)	250 ppm (1210 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
tert-Butyl acetate (1,1-dimethylethyl ester)	MDHS 72	200 ppm (966 mg/m³)	250 ppm (1210 mg/m³)	2.5	2.5	5-200	5-200	Up to 8	15	GC-FID	ST 226-357 52
tert-Butyl acetate (1,1-dimethylethyl ester)	MDHS 88 ¥	200 ppm (966 mg/m³)	250 ppm (1210 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
n-Butyl acrylate	MDHS 104 §	1 ppm (5 mg/m³)	5 ppm (26 mg/m³)	12		50		4		GC-FID	ST 226-73 49
n-Butyl acrylate	MDHS 88 ¥	1 ppm (5 mg/m³)	5 ppm (26 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
2-sec-Butylphenol (o-sec-Butylphenol)	MDHS 104 §	5 ppm (31 mg/m³)		20		200		100 min		GC-FID, GC-MS	ST 226-95 50
Cadmium & compounds (except oxide fume, sulphide & sulphide pigments) (as Cd)	ISO 15202:2020	0.025 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Cadmium oxide fume (as Cd)	ISO 15202:2020	0.025 mg/m³	0.05 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Cadmium sulphide & cadmium sulphide pigments (respirable dust) (as Cd)	ISO 15202:2020	0.03 mg/m³		1440		3000		8		ICP-AES	CYC 225-69 124 FLT 225-1930 100
Cadmium sulphide & cadmium sulphide pigments (respirable dust) (as Cd)	ISO 15202:2020	0.03 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100 FOAM 225-772 121
Calcium carbonate (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Calcium carbonate (inhalable dust)	ISO 15202:2020	10 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Calcium carbonate (respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Calcium carbonate (respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Calcium carbonate (respirable)	ISO 15202:2020	4 mg/m³		1440		3000		8		ICP-AES	CYC 225-69 124 FLT 225-1930 100
Calcium carbonate (respirable)	ISO 15202:2020	4 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100 FOAM 225-772 121
Calcium cyanamide	ISO 15202:2020	0.5 mg/m³	1 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Calcium hydroxide	MDHS 14/4	5 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Calcium hydroxide	ISO 15202:2020	5 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Calcium hydroxide (respirable fraction)	MDHS 14/4	1 mg/m³	4 mg/m³	1440	45	3000	3000	8	15	GR	CYC 225-69 124 FLT 225-58F 108
Calcium hydroxide (respirable fraction)	MDHS 14/4	1 mg/m³	4 mg/m³	960	30	2000	2000	8	15	GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Calcium hydroxide (respirable fraction)	ISO 15202:2020	1 mg/m³	4 mg/m³	1440	45	3000	3000	8	15	ICP-AES	CYC 225-69 124 FLT 225-1930 100
Calcium hydroxide (respirable fraction)	ISO 15202:2020	1 mg/m³	4 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100 FOAM 225-772 121
Calcium oxide	MDHS 14/4	2 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING†								Analytical Method	SKC Collecting Equipment and Page No.
		WEL		Vol. (liter)		Rate (ml/min)		Time			
		TWA (ppm)	STEL• (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)		
Calcium oxide	ISO 15202:2020	2 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Calcium oxide (respirable fraction)	MDHS 14/4	1 mg/m³	4 mg/m³	1440	45	3000	3000	8	15	GR	CYC 225-69 124 FLT 225-58F 108
Calcium oxide (respirable fraction)	MDHS 14/4	1 mg/m³	4 mg/m³	960	30	2000	2000	8	15	GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Calcium oxide (respirable fraction)	ISO 15202:2020	1 mg/m³	4 mg/m³	1440	45	3000	3000	8	15	ICP-AES	CYC 225-69 124 FLT 225-1930 100
Calcium oxide (respirable fraction)	ISO 15202:2020	1 mg/m³	4 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100 FOAM 225-772 121
Calcium silicate (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Calcium silicate (respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Calcium silicate (respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Captan (ISO)	MDHS 94/2	5 mg/m³	15 mg/m³	960	30	2000	2000	8	15	GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Carbaryl	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Carbon black	MDHS 14/4	3.5 mg/m³	7 mg/m³	960	30	2000	2000	8	15	GR	IOM 225-70A 121 FLT 225-58F 108
Carbon disulphide	MDHS 96	5 ppm (15 mg/m³)		2-25		10-200		Up to 8		GC-FPD	ST 226-01 and ST 226-44 49
Carbon disulphide	MDHS 96	5 ppm (15 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Carbon tetrachloride	MDHS 104	1 ppm (6.4 mg/m³)	5 ppm (32 mg/m³)	1-6.2	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
Carbon tetrachloride	MDHS 104	1 ppm (6.4 mg/m³)	5 ppm (32 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358 52
Carbon tetrachloride	MDHS 88 ¥	1 ppm (6.4 mg/m³)	5 ppm (32 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Carbon tetrachloride	MDHS 104 §	1 ppm (6.4 mg/m³)	5 ppm (32 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-35 48
Carbon tetrachloride	MDHS 104 §	1 ppm (6.4 mg/m³)	5 ppm (32 mg/m³)	3-96	3	10-200	10-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Cellulose (inhalable dust)	MDHS 14/4	10 mg/m³	20 mg/m³	960	30	2000	2000	8	15	GR	IOM 225-70A 121 FLT 225-58F 108
Cellulose (respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Cellulose (respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Chlorfenvinphos	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
o-Chloroaniline (OCA; 2-chloroaniline)	MDHS 75/2			200		2000		Up to 8		HPLC-UV	IOM 225-70A 121 FLT 225-58F‡ 108 ST 226-35 48
Chlorobenzene	MDHS 104	1 ppm (4.7 mg/m³)	3 ppm (14 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
Chlorobenzene	MDHS 88 ¥	1 ppm (4.7 mg/m³)	3 ppm (14 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Chlorobenzene	MDHS 104 §	1 ppm (4.7 mg/m³)	3 ppm (14 mg/m³)	1.5-40	1.5-3	20-200	10-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
1-Chloro-2,3-epoxypropane (Epichlorohydrin; ECH)	MDHS 88 ¥	0.5 ppm (1.9 mg/m³)	1.5 ppm (5.8 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
1-Chloro-2,3-epoxypropane (epichlorohydrin)	MDHS 104	0.5 ppm (1.9 mg/m³)	1.5 ppm (5.8 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 or ST 226-358 52
1-Chloro-2,3-epoxypropane (epichlorohydrin)	MDHS 96	0.5 ppm (1.9 mg/m³)	1.5 ppm (5.8 mg/m³)	2-30	2-3	10-200	10-200	Up to 8	15	GC-FID	ST 226-01 48
Chloroethane (Ethyl chloride)	MDHS 104 §	50 ppm (134 mg/m³)		0.3-3		20-50		Up to 8		GC-FID, GC-MS	ST 226-25 48
2-Chloroethanol	MDHS 96		1 ppm (3.4 mg/m³)	2-35	2-3	10-200	10-200	2-8	15	GC-FID	ST 226-81A 49
Chloroform	MDHS 88 ¥	2 ppm (9.9 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Chloroform	MDHS 104 §	2 ppm (9.9 mg/m³)		1-50		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
Chloromethane	MDHS 104 §	50 ppm (105 mg/m³)	100 ppm (210 mg/m³)	1-10	1-10	50-200	50-200	2-8	15	GC-FID	ST 226-09 √ and ST 226-01 √ 48
1-Chloro-4-nitrobenzene	MDHS 104 §	1 mg/m³	2 mg/m³	1-96	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Chlorothalonil	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Chlorpyrifos (ISO)	MDHS 94/2	0.2 mg/m³	0.6 mg/m³	960	30	2000	2000	8	15	GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Chlorpyriphos-Methyl	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Chromium	ISO 15202:2020	0.5 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Chromium (II) compounds (as Cr)	ISO 15202:2020	0.5 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Chromium (III) compounds (as Cr)	ISO 15202:2020	0.5 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Chromium (VI) (Hexavalent chromium) compounds (as Cr)	MDHS 52/4	Static method only		240		2000		2		CLR	IOM 225-70A 121 FLT 225-9026 68

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING†								Analytical Method	SKC Collecting Equipment and Page No.
		WEL		Vol. (liter)		Rate (ml/min)		Time			
		TWA (ppm)	STEL• (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)		
Chromium (VI) (Hexavalent chromium) compounds (as Cr)	ISO 16740:2005	0.01 mg/m³ ♣		960		2000		8		IC	IOM 225-70A 121 or FLT 225-5-25 105 FLT 225-9026 68
Cobalt & cobalt compounds (as Co)	ISO 15202:2020	0.1 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Copper & compounds (dust & mists) (as Cu)	ISO 15202:2020	1 mg/m³	2 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Copper fume (as Cu)	ISO 15202:2020	0.2 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Cotton dust	MDHS 14/4	2.5 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Crotonaldehyde	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST 226-119 or ST 226-120 50
Crotonaldehyde	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS 500-100 92
Cumene (Isopropylbenzene)	MDHS 104 §	25 ppm (125 mg/m³)	50 ppm (250 mg/m³)	1-30	1-3	20-200	10-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Cumene (Isopropylbenzene)	MDHS 104	25 ppm (125 mg/m³)	50 ppm (250 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
Cumene (Isopropylbenzene)	MDHS 88 ¥	25 ppm (125 mg/m³)	50 ppm (250 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Cyclohexane	MDHS 88 ¥	100 ppm (350 mg/m³)	300 ppm (1050 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Cyclohexane	MDHS 104 §	100 ppm (350 mg/m³)	300 ppm (1050 mg/m³)	2.5-5	2.5-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Cyclohexanol	MDHS 88 ¥	50 ppm (208 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Cyclohexanol	MDHS 104 §	50 ppm (208 mg/m³)		1-10		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
Cyclohexanone	MDHS 104	10 ppm (41 mg/m³)	20 ppm (82 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
Cyclohexanone	MDHS 88 ¥	10 ppm (41 mg/m³)	20 ppm (82 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Cyclohexanone	MDHS 104 §	10 ppm (41 mg/m³)	20 ppm (82 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Cypermethrin	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Deltamethrin	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01
Diatomaceous earth (natural) (respirable dust)	MDHS 14/4	1.2 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Diatomaceous earth (natural) (respirable dust)	MDHS 14/4	1.2 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Dibismuth tritelluride	ISO 15202:2020	10 mg/m³	20 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Diboron trioxide (Boron oxide)	MDHS 14/4	10 mg/m³	20 mg/m³	960	30	2000	2000	8	15	GR	IOM 225-70A 121 FLT 225-58F 108
Diboron trioxide (Boron oxide)	ISO 15202:2020	10 mg/m³	20 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
1,2-Dibromoethane (Ethylene dibromide; EDB)	MDHS 96	0.5 ppm (3.9 mg/m³)		0.1-25		50		Up to 8		GC-ECD	ST 226-01 48
1,2-Dibromoethane (Ethylene dibromide; EDB)	MDHS 88 ¥	0.5 ppm (3.9 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
2,6-Di-tert-butyl-p-cresol	MDHS 104 §	10 mg/m³		100		1000		100 min		GC-FID, GC-MS	ST 226-57 49
Dibutyl phthalate (DBP)	MDHS 104 §	5 mg/m³	10 mg/m³	240	15	1000	1000	4	15	GC-FID, GC-MS	ST 226-56 49
Dichlofluanid	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
2,2'-Dichloro-4,4'-methylene dianiline (MbOCA; 4,4'-Methylenebis(2-chloroaniline); 3'-Dichloro-4,4'-diaminodiphenyl methane)	MDHS 75/2	0.005 mg/m³		200		2000		Up to 8		HPLC-UV	IOM 225-70A 121 FLT 225-58F‡ 108
1,2-Dichlorobenzene (ortho-dichlorobenzene)	MDHS 88 ¥	25 ppm (153 mg/m³)	50 ppm (306 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
1,2-Dichlorobenzene (ortho-dichlorobenzene)	MDHS 104 §	25 ppm (153 mg/m³)	50 ppm (306 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15 min	GC-FID, GC-MS	ST 226-01 48
1,4-Dichlorobenzene (para-dichlorobenzene)	MDHS 104 §	2 ppm (12 mg/m³)	10 ppm (60 mg/m³)	1-8	1-3	20-200	20-200	Up to 8	15 min	GC-FID, GC-MS	ST 226-01 48
1,4-Dichlorobenzene (para-dichlorobenzene)	MDHS 88 ¥	2 ppm (12 mg/m³)	10 ppm (60 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
1,1-Dichloroethane	MDHS 104 §	100 ppm		0.5-15		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
1,1-Dichloroethane	MDHS 88 ¥	100 ppm		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
1,2-Dichloroethane (Ethylene dichloride)	MDHS 104	5 ppm (21 mg/m³)		1-5.4		20-100		Up to 2		GC-FID, GC-MS	ST 226-357 52
1,2-Dichloroethane (Ethylene dichloride)	MDHS 104	5 ppm (21 mg/m³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-358 52
1,2-Dichloroethane (Ethylene dichloride)	MDHS 104 §	5 ppm (21 mg/m³)		1-50		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
1,2-Dichloroethane (Ethylene dichloride)	MDHS 88 ¥	5 ppm (21 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
1,2-Dichloroethylene, cis:trans isomers 60:40	MDHS 104 §	200 ppm (806 mg/m³)	250 ppm (1010 mg/m³)	0.2-5	0.2-3	20-200	10-200	Up to 8	15 min	GC-FID, GC-MS	ST 226-01 48

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING† WEL TWA (ppm)	WEL STEL• (ppm)	Vol. (liter) TWA	Vol. (liter) STEL	Rate (ml/min) TWA	Rate (ml/min) STEL	Time TWA (hr)	Time STEL (min)	Analytical Method	SKC Collecting Equipment and Page No.
Dichlorofluoromethane		10 ppm (43 mg/m³)								GC-FID	ST 226-09 √ 48
Dichloromethane (Methylene chloride)	MDHS 104	100 ppm (353 mg/m³)	200 ppm (706 mg/m³)	1-2.1		20-100		Up to 1.75		GC-FID, GC-MS	ST 226-358 52
Dichloromethane (Methylene chloride)	MDHS 104 §	100 ppm (353 mg/m³)	200 ppm (706 mg/m³)	0.5-2.5	0.5-2.5	10-200	10-200	Up to 8	15	GC-FID	ST 226-01 √ 48
Dichloromethane (Methylene chloride)	MDHS 88 ¥	100 ppm (353 mg/m³)	200 ppm (706 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
2,2'-Dichloro-4,4'-methylene dianiline (MbOCA; 4,4'-Methylenebis(2-chloroaniline); 3'-Dichloro-4,4'-diaminodiphenyl methane)	MDHS 75/2	0.005 mg/m³		200		2000		Up to 8		HPLC-UV	IOM 225-70A 121 FLT 225-58F‡ 108
Dicyclopentadiene	MDHS 88 ¥	5 ppm (27 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Diethylamine	MDHS 104 §	5 ppm (15 mg/m³)	10 ppm (30 mg/m³)	3-30	3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-10 48
Diethyl ether (Ethyl ether; Ether)	MDHS 96	100 ppm (310 mg/m³)	200 ppm (620 mg/m³)	0.25-3	0.25-3	10-200	10-200	Up to 8	15	GC-FID	ST 226-01 48
Diethyl ether (Ethyl ether; Ether)	MDHS 88 ¥	100 ppm (310 mg/m³)	200 ppm (620 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Diethyl phthalate (DEP)	MDHS 104 §	5 mg/m³	10 mg/m³	240	15	1000	1000	4	15	GC-FID, GC-MS	ST 226-56 49
Diethyl sulphate (DES)	MDHS 104	0.05 ppm (0.32 mg/m³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-357 52
Diethyl sulphate (DES)	MDHS 89	0.05 ppm (0.32 mg/m³)		3-96		200		Up to 8		GC-MSD	ST 226-357 52
Diisopropyl ether (Isopropyl ether)	MDHS 88 ¥	250 ppm (1060 mg/m³)	310 ppm (1310 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Diisopropyl ether (Isopropyl ether)	MDHS 96	251 ppm (1060 mg/m³)	311 ppm (1310 mg/m³)	0.1-3	0.1-3	10-50	10-50	Up to 8	15	GC-FID	ST 226-01 48
Dimethoate	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Dimethoxymethane (Methylal)	MDHS 88 ¥	1000 ppm (3160 mg/m³)	1250 ppm (3950 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Dimethoxymethane (Methylal)	MDHS 104 §	1000 ppm (3160 mg/m³)	1250 ppm (3950 mg/m³)	1-3	1-3	10-200	10-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
N,N-Dimethylacetamide	MDHS 104 §	10 ppm (36 mg/m³)	20 ppm (72 mg/m³)	15-80	15	10-1000	10-1000	Up to 8	15	GC-FID, GC-MS	ST 226-10 48
Dimethylamine (2-Dimethylamine)	MDHS 104 §	2 ppm (3.8 mg/m³)	6 ppm (11 mg/m³)	3-30	3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-10 48
N,N-Dimethylaniline	MDHS 88 ¥	5 ppm (25 mg/m³)	10 ppm (50 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
N,N-Dimethylaniline	MDHS 104 §	5 ppm (25 mg/m³)	10 ppm (50 mg/m³)	3-20	3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-10 48
N,N-Dimethylformamide (DMF)	MDHS 88 ¥	5 ppm (15 mg/m³)	10 ppm (30 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
2,6-Dimethylheptan-4-one (Diisobutyl ketone; DIBK)	MDHS 104 §	25 ppm (148 mg/m³)		1-10		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
2,6-Dimethylheptan-4-one (Diisobutyl ketone; DIBK)	MDHS 88 ¥	25 ppm (148 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Dimethyl phthalate (DMP)	MDHS 104 §	5 mg/m³	10 mg/m³	240	15	1000	1000	4	15	GC-FID, GC-MS	ST 226-56 49
Dimethyl sulphate (DMS)	MDHS 96	0.05 ppm (0.26 mg/m³)		0.25-12		10-200		Up to 8		GC-ECD	ST 226-114 50
Dimethyl sulphate (DMS)	MDHS 89	0.05 ppm (0.26 mg/m³)		3-96		200		Up to 8		GC-MSD	ST 226-357 52
Dimethyl sulphate	MDHS 104	0.05 ppm (0.26 mg/m³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-357 52
1,4-Dioxane	MDHS 96	20 ppm (73 mg/ m³)		0.5-15		10-200		Up to 8		GC-FID	ST 226-01 48
1,4-Dioxane	MDHS 88 ¥	20 ppm (73 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Diphenyl ether (Diphenyl oxide; Phenyl ether)	MDHS 88 ¥	1 ppm (7 mg/m³)	2 ppm (14 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Diphenyl ether (vapour)	MDHS 96	1 ppm (7 mg/m³)	2 ppm (14 mg/m³)	1-50	1-3	10-200	10-200	Up to 8	15	GC-FID	ST 226-01 48
Dusts (Inhalable)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Dusts (Respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Dusts (Respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Emery (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Emery (respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Emery (respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Endosulfan	MDHS 94/2	0.1 mg/m³	0.3 mg/m³	960	30	2000	2000	8	15	GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Endosulfan-sulphate	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Enflurane (Enthrane; Ethrane)	MDHS 88 ¥	50 ppm (383 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Ethane-1,2-diol (particulate)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Ethane-1,2-diol (vapour) (Ethylene glycol; Glycol)	MDHS 88 ¥	20 ppm (52 mg/m³)	40 ppm (104 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING† WEL TWA (ppm)	WEL STEL• (ppm)	Vol. (liter) TWA	Vol. (liter) STEL	Rate (ml/min) TWA	Rate (ml/min) STEL	Time TWA (hr)	Time STEL (min)	Analytical Method	SKC Collecting Equipment and Page No.
Ethanol (Ethyl alcohol)	MDHS 104	1000 ppm (1920 mg/m³)		1-1.2		20-100		Up to 1		GC-FID, GC-MS	ST 226-358 52
Ethanol (Ethyl alcohol)	MDHS 104 §	1000 ppm (1920 mg/m³)		0.1-1		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
Ethanol (Ethyl alcohol)	MDHS 88 ¥	1000 ppm (1920 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
2-Ethoxyethanol (Cellosolve)	MDHS 104	2 ppm (8 mg/m³)		1-5		20-100		Up to 2		GC-FID, GC-MS	ST 226-357 52
2-Ethoxyethanol (Cellosolve)	MDHS 104	2 ppm (8 mg/m³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-358 52
2-Ethoxyethanol (Cellosolve)	MDHS 104 §	2 ppm (8 mg/m³)		1-10		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
2-Ethoxyethanol (Cellosolve)	MDHS 88 ¥	2 ppm (8 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
2-Ethoxyethyl acetate (2-Cellosolve acetate)	MDHS 104	2 ppm (11 mg/m³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-357 or ST 226-358 52
2-Ethoxyethyl acetate (2-Cellosolve acetate)	MDHS 104 §	2 ppm (11 mg/m³)		1-10		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
2-Ethoxyethyl acetate (2-Cellosolve acetate)	MDHS 88 ¥	2 ppm (11 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Ethyl acetate	MDHS 104	200 ppm (734 mg/m³)	400 ppm (1468 mg/m³)	1-3.6	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
Ethyl acetate	MDHS 104	200 ppm (734 mg/m³)	400 ppm (1468 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358 52
Ethyl acetate	MDHS 104 §	200 ppm (734 mg/m³)	400 ppm (1468 mg/m³)	0.1-10	0.1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Ethyl acetate	MDHS 88 ¥	200 ppm (734 mg/m³)	400 ppm (1468 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Ethyl acrylate	MDHS 104	5 ppm (21 mg/m³)	10 ppm (42 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
Ethyl acrylate	MDHS 104 §	5 ppm (21 mg/m³)	10 ppm (42 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Ethyl acrylate	MDHS 88 ¥	5 ppm (21 mg/m³)	10 ppm (42 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Ethylbenzene	MDHS 104 §	100 ppm (441 mg/m³)	125 ppm (552 mg/m³)	1-24	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Ethylbenzene	MDHS 88 ¥	100 ppm (441 mg/m³)	125 ppm (552 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Ethyl formate	MDHS 104 §	100 ppm (308 mg/m³)	150 ppm (462 mg/m³)	0.3-10	0.3-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Ethyl formate	MDHS 88 ¥	100 ppm (308 mg/m³)	150 ppm (462 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Ethylene oxide	MDHS 104	1 ppm (1.8 mg/m³)		0.43		20-100		Up to 0.3		GC-FID, GC-MS	ST 226-358 52
Ethylene oxide	MDHS 88 ¥	1 ppm (1.8 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-005 82
Fenoxycarb	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Ferrous foundary particulate (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Ferrous foundary particulate (respirable dust)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Ferrous foundary particulate (respirable dust)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Flour dust	MDHS 14/4	10 mg/m³	30 mg/m³	960	30	2000	2000	8	15	GR	IOM 225-70A 121 FLT 225-58F 108
Formaldehyde	MDHS 102	2 ppm (2.5 mg/m³)	2 ppm (2.5 mg/m³)	48-480	1.5-15	100-1000	100-1000	8	15	HPLC-PDA	ST 226-119 or ST 226-120 50
Formaldehyde	MDHS 102	2 ppm (2.5 mg/m³)	2 ppm (2.5 mg/m³)	diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS 500-100 92
2-Furaldehyde (furfural)	MDHS 104 §	2 ppm (8 mg/m³)	5 ppm (20 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 8	15	GC-FID, GC-MS	ST 226-357 52
Glass wool mineral fibre *(see MMMF)* (as inhalable dust)	MDHS 59/2 (MDHS 14/4)	5 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Glass wool mineral fibre *(see MMMF)* (as respirable fibres)	MDHS 59/2	2 fibres/ml		480		1000		8		PCM	FLT/CL 225-54A or FLT/CL 225-54 or FLT 225-1913 100
Glutaraldehyde	MDHS 102	0.05 ppm (0.2 mg/m³)	0.05 ppm (0.2 mg/m³)	48-480	1.5-15	100-1000	100-1000	8	15	HPLC-PDA	ST 226-119 or ST 226-120 50
Glutaraldehyde	MDHS 102	0.05 ppm (0.2 mg/m³)	0.05 ppm (0.2 mg/m³)	diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS 500-100 92
Glycerol, mist	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Glycerol trinitrate	MDHS 104 §	0.01 ppm (0.095 mg/m³)	0.02 ppm (0.19 mg/m³)	3-100	3-15	200-1000	200-1000	Up to 8	15	GC-FID, GC-MS	ST 226-35-03 48
Grain dust	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Graphite (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Graphite (respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Graphite (respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Gypsum (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING† WEL TWA (ppm)	WEL STEL• (ppm)	Vol. (liter) TWA	Vol. (liter) STEL	Rate (ml/min) TWA	Rate (ml/min) STEL	Time TWA (hr)	Time STEL (min)	Analytical Method	SKC Collecting Equipment and Page No.
Gypsum (respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Gypsum (respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Halogeno-platinum compounds (as Pt)	ISO 15202:2020	0.002 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Halogeno-platinum compounds (as Pt)	MDHS 91/2 ◊	0.002 mg/m³		960		2000		8		XRFS	IOM 225-70A 121 FLT 225-1930 100
Halothane (Fluothane)	MDHS 88 ¥	10 ppm (82 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Hardwood dust (or wood dust mixture containing hardwood) (inhalable fraction)	MDHS 14/4	3 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
HDI (1,6-Hexamethylene diisocyanate) (as -NCO)	MDHS 25/4 Δ	0.02 mg/m³	0.07 mg/m³	480	15	1000	1000	8	15	HPLC	IMP 225-36-4 70 IT 225-22 70 CST 225-1109 or FLT CONTACT IOM 225-79A 121 SKC
HDI (1,6-Hexamethylene diisocyanate) (as -NCO)	MDHS 25/4 **	0.02 mg/m³	0.07 mg/m³	960	15	2000	2000	8	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
HDI (1,6-Hexamethylene	MDHS 25/4	0.02 mg/m³	0.07 mg/m³	900	30	2000	2000	7.5	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
diisocyanate) (as -NCO) (vapour only)											
n-Heptane	MDHS 104	500 ppm (2085 mg/m³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-357 or ST 226-358 52
n-Heptane	MDHS 104 §	500 ppm (2085 mg/m³)		10		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
n-Heptane	MDHS 88 ¥	500 ppm (2085 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Heptan-2-one (2-Heptanone; Methyl n-amyl ketone)	MDHS 88 ¥	50 ppm (237 mg/m³)	100 ppm (475 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Heptan-2-one (2-Heptanone; Methyl n-amyl ketone)	MDHS 104 §	50 ppm (237 mg/m³)	100 ppm (475 mg/m³)	1-25	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Heptan-3-one (3-Heptanone; Ethyl butyl ketone)	MDHS 88 ¥	35 ppm (166 mg/m³)	100 ppm (475 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Heptan-3-one (3-Heptanone; Ethyl butyl ketone)	MDHS 104 §	35 ppm (166 mg/m³)	100 ppm (475 mg/m³)	1-25	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Hexanal (Hexanaldehyde)	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST 226-119 or ST 226-120 50
Hexanal (Hexanaldehyde)	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS 500-100 92
n-Hexane	MDHS 104	20 ppm (72 mg/m³)		1-3.2		20-100		Up to 2		GC-FID, GC-MS	ST 226-357 52
n-Hexane	MDHS 104	20 ppm (72 mg/m³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-358 52
n-Hexane	MDHS 104 §	20 ppm (72 mg/m³)		10		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
n-Hexane	MDHS 88 ¥	20 ppm (72 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Hexan-2-one (2-Hexanone; Methyl butyl ketone; MBK)	MDHS 88 ¥	5 ppm (21 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Hexan-2-one (2-Hexanone; Methyl butyl ketone; MBK)	MDHS 104 §	5 ppm (21 mg/m³)		1-10		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
Hydrazine	MDHS 86/2 Δ	0.01 ppm (0.013 mg/m³)	0.1 ppm (0.13 mg/m³)	480		1000		8		HPLC-UV	IMP 225-36-1 70 IT 225-22 70
Hydrazine	MDHS 86/2	0.01 ppm (0.013 mg/m³)	0.1 ppm (0.13 mg/m³)	240		2000		2		HPLC-UV	SH 225-1107 114 FLT 225-58F‡ 108
Hydrogen cyanide	MDHS 56/3 Δ	0.9 ppm (1 mg/m³)	4.5 ppm (5 mg/m³)	36	15	200	1000	3	15	ISE	IMP 225-36-2 70 IT 225-22 70 IOM 225-70A 121 FLT 225-1911 100
Hydroquinone	MDHS 98/3	0.5 mg/m³		960		2000		8		HPLC-UV	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-03 48
4-Hydroxy-4-methylpentan-2-one (Diacetone alcohol)	MDHS 88 ¥	50 ppm (241 mg/m³)	75 ppm (362 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
4-Hydroxy-4-methylpentan-2-one (diacetone alcohol)	MDHS 104 §	50 ppm (241 mg/m³)	75 ppm (362 mg/m³)	1-10	1-10	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
2-Hydroxypropyl acrylate	MDHS 104 §	0.5 ppm (2.7 mg/m³)		10		100		Up to 8		GC-FID, GC-MS	ST 226-73 49
Indium & compounds (as In)	ISO 15202:2020	0.1 mg/m³	0.3 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Iodomethane (Methyl iodide)	MDHS 88 ¥	2 ppm (12 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Iodomethane (methyl iodine)	MDHS 96	2 ppm (12 mg/m³)		15-50		10-1000		Up to 8		GC-FID	ST 226-01 48
Iprodione	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Iron oxide (fume) (as Fe)	ISO 15202:2020	5 mg/m³	10 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Iron salts (as Fe)	ISO 15202:2020	1 mg/m³	2 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Isobutyl acetate	MDHS 104	150 ppm (724 mg/m³)	187 ppm (903 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 or ST 226-358 52
Isobutyl acetate	MDHS 104 §	150 ppm (724 mg/m³)	187 ppm (903 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Isobutyl acetate	MDHS 88 ¥	150 ppm (724 mg/m³)	187 ppm (903 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING† WEL TWA (ppm)	WEL STEL• (ppm)	Vol. (liter) TWA	Vol. (liter) STEL	Rate (ml/min) TWA	Rate (ml/min) STEL	Time TWA (hr)	Time STEL (min)	Analytical Method	SKC Collecting Equipment and Page No.
Isocyanates (all, except methyl isocyanate) (as -NCO)	MDHS 25/4 Δ	0.02 mg/m³	0.07 mg/m³	480	15	1000	1000	8	15	HPLC	IMP 225-36-4 70 or IT 225-22 70 CST 225-1109 or FLT CONTACT IOM 225-79A 121 SKC
Isocyanates (all, except methyl isocyanate) (as -NCO)	MDHS 25/4 **	0.02 mg/m³	0.07 mg/m³	480	15	1000	1000	8	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
Isocyanates (all, except methyl isocyanate) (as -NCO) (vapour only)	MDHS 25/4	0.02 mg/m³	0.07 mg/m³	960	30	2000	2000	8	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
Isoflurane	MDHS 88 ¥	50 ppm (383 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
IsoOctyl alcohol (mixed isomers)	MDHS 104 §	50 ppm (271 mg/m³)		10		200		50 min		GC-FID, GC-MS	ST 226-01 48
IsoOctyl alcohol (mixed isomers)	MDHS 88 ¥	50 ppm (271 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Isopropyl acetate	MDHS 104		200 ppm (849 mg/m³)	1-6	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 or ST 226-358 52
Isopropyl acetate	MDHS 104 §		200 ppm (849 mg/m³)	0.1-9	0.1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Isopropyl acetate	MDHS 88 ¥		200 ppm (849 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Isovaleraldehyde	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST 226-119 or ST 226-120 50
Isovaleraldehyde	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS 500-100 92
Kaolin (respirable dust)	MDHS 14/4	2 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Kaolin (respirable dust)	MDHS 14/4	2 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Lead & lead compounds	MDHS 91/2	0.15 mg/m³ #		960		2000		8		XRFS	IOM 225-70A 121 FLT 225-1930 100
Lead & lead compounds	ISO 15202:2020	0.15 mg/m³ #		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Limestone (inhalable, total)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Limestone (respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Limestone (respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Lindane	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Lithium hydride	ISO 15202:2020		0.02 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Lithium hydroxide	ISO 15202:2020		1 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Machine-made mineral fibre (MMMF) (except for refractory ceramic fibres and special purpose fibres) (as inhalable dust)	MDHS 59/2	5 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Machine-made mineral fibre (MMMF) (except for refractory ceramic fibres and special purpose fibres) (as respirable fibres)	MDHS 59/2	2 fibres/ml		480		1000		8		PCM	FLT/CL 225-54A or FLT/CL 225-54 or FLT 225-1913 100
Magnesite (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Magnesite (inhalable dust)	ISO 15202:2020	10 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Magnesite (respirable dust)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Magnesite (respirable dust)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Magnesite (respirable dust)	ISO 15202:2020	4 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Magnesite (respirable dust)	ISO 15202:2020	4 mg/m³		1440		3000		8		ICP-AES	CYC 225-69 124 FLT 225-1930 100
Magnesium oxide (as Mg) (inhalable dust fume)	ISO 15202:2020	10 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Magnesium oxide (as Mg) (respirable dust)	ISO 15202:2020	4 mg/m³		1440		3000		8		ICP-AES	CYC 225-69 124 FLT 225-1930 100
Magnesium oxide (as Mg) (respirable dust)	ISO 15202:2020	4 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Maleic anhydride	MDHS 104	1 mg/m³	3 mg/m³	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
Manganese & its inorganic compounds (as Mn) (inhalable fraction)	ISO 15202:2020	0.2 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Manganese & its inorganic compounds (as Mn) (respirable fraction)	ISO 15202:2020	0.05 mg/m³		1440		3000		8		ICP-AES	CYC 225-69 124 FLT 225-1930 100
Manganese & its inorganic compounds (as Mn) (respirable fraction)	ISO 15202:2020	0.05 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Manganese in welding fume	ISO 10882-1:2011			varies		750		varies		GR & others	H/SET 225-6200 117 MINI 225-6201 117 CAL 225-6202 117 FLT 225-8050 100
Marble (total inhalable)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Marble (respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Marble (respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING† WEL TWA (ppm)	WEL STEL• (ppm)	Vol. (liter) TWA	Vol. (liter) STEL	Rate (ml/min) TWA	Rate (ml/min) STEL	Time TWA (hr)	Time STEL (min)	Analytical Method	SKC Collecting Equipment and Page No.
MDI (Methylenebis(4-phenyl isocyanate)) (as -NCO) *(see Isocyanates)*	MDHS 25/4 Δ	0.02 mg/m³	0.07 mg/m³	480	15	1000	1000	8	15	HPLC	IMP 225-36-4 70 IT 225-22 70 CST 225-1109 or FLT CONTACT IOM 225-79A 121 SKC
MDI (Methylenebis(4-phenyl isocyanate)) (as -NCO) *(see Isocyanates)*	MDHS 25/4 **	0.02 mg/m³	0.07 mg/m³	960	15	2000	2000	8	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
MDI (Methylenebis(4-phenyl isocyanate)) (as -NCO) (vapour only) *(see Isocyanates)*	MDHS 25/4	0.02 mg/m³	0.07 mg/m³	900	30	2000	2000	450 mins	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
Mercury and divalent inorganic compounds including mercuric oxide and mercuric chloride (as mercury)	MDHS 91/2 ◊	0.02 mg/m³		960		2000		8		XRFS	IOM 225-70A 121 FLT 225-1930 100
Metalaxyl	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Metalworking fluids (water-mix)	MDHS 95/3			960		2000		8		AAS/ICP-AES	IOM 225-70A 121 FLT 225-1930 or FLT 225-1825 107
Methanol (Methyl alcohol)	MDHS 104 §	200 ppm (266 mg/m³)	250 ppm (333 mg/m³)	1-5	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-51 49
2-Methoxyethanol (Methyl Cellosolve)	MDHS 104	1 ppm (3 mg/m³)		1-3		20-100		Up to 2		GC-FID, GC-MS	ST 226-357 52
2-Methoxyethanol (Methyl Cellosolve)	MDHS 104	1 ppm (3 mg/m³)		1-5		20-100		Up to 2		GC-FID, GC-MS	ST 226-358 52
2-Methoxyethanol (Methyl Cellosolve)	MDHS 104 §	1 ppm (3 mg/m³)		6-50		10-50		Up to 8		GC-FID, GC-MS	ST 226-01 48
2-Methoxyethanol (Methyl Cellosolve)	MDHS 88 ¥	1 ppm (3 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
2-Methoxyethyl acetate (Methyl Cellosolve acetate; ethylene glycol monomethyl ether acetate)	MDHS 104	1 ppm (5 mg/m³)		1-8		20-100		Up to 2		GC-FID, GC-MS	ST 226-357 52
2-Methoxyethyl acetate (Methyl Cellosolve acetate; ethylene glycol monomethyl ether acetate)	MDHS 104	1 ppm (5 mg/m³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-358 52
2-Methoxyethyl acetate (Methyl Cellosolve acetate; ethylene glycol monomethyl ether acetate)	MDHS 104 §	1 ppm (5 mg/m³)		0.2-20		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
2-Methoxyethyl acetate (Methyl Cellosolve acetate; ethylene glycol monomethyl ether acetate)	MDHS 88 ¥	1 ppm (5 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
(2-methoxymethylethoxy)propanol (Dipropylene glycol monomethyl ether; DPGME)	MDHS 104 §	50 ppm (308 mg/m³)		10		100		Up to 8		GC-FID, GC-MS	ST 226-01 48
(2-methoxymethylethoxy)propanol (Dipropylene glycol monomethyl ether; DPGME)	MDHS 88 ¥	50 ppm (308 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
1-Methoxypropan-2-ol (Propylene glycol monomethyl ether; PGME)	MDHS 104 §	100 ppm (375 mg/m³)	150 ppm (560 mg/m³)	10	3	100	200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
1-Methoxypropan-2-ol (Propylene glycol monomethyl ether; PGME)	MDHS 88 ¥	100 ppm (375 mg/m³)	150 ppm (560 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
1-Methoxypropyl acetate (1-Methoxy-2-propyl acetate; Propylene glycol monomethyl ether acetate; PGMEA)	MDHS 104 §	50 ppm (274 mg/m³)	100 ppm (548 mg/m³)	10	3	100	200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
1-Methoxypropyl acetate (1-Methoxy-2-propyl acetate; Propylene glycol monomethyl ether acetate; PGMEA)	MDHS 88 ¥	50 ppm (274 mg/m³)	100 ppm (548 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Methyl acetate	MDHS 104	200 ppm (616 mg/m³)	250 ppm (770 mg/m³)	1-7	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358 52
Methyl acetate	MDHS 88 ¥	200 ppm (616 mg/m³)	250 ppm (770 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Methyl acetate	MDHS 104 §	200 ppm (616 mg/m³)	250 ppm (770 mg/m³)	0.2-10	0.2-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Methyl acrylate	MDHS 104	5 ppm (18 mg/m³)	10 ppm (36 mg/m³)	1-6.5	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
Methyl acrylate	MDHS 88 ¥	5 ppm (18 mg/m³)	10 ppm (36 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Methyl acrylate	MDHS 104 §	5 ppm (18 mg/m³)	10 ppm (36 mg/m³)	1-5	1-5	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
3-Methylbutan-1-ol (Isoamyl alcohol)	MDHS 104 §	100 ppm (366 mg/m³)	125 ppm (458 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
3-Methylbutan-1-ol (Isoamyl alcohol)	MDHS 88 ¥	100 ppm (366 mg/m³)	125 ppm (458 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Methyl-tert-butyl-ether (Methyl t-butyl ether; MTBE)	MDHS 88 ¥	50 ppm (183.5 mg/m³)	100 ppm (367 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Methyl-tert-butyl-ether (Tertiary-butyl-methylether, Methyl t-butyl ether; MTBE)	MDHS 96	50 ppm (183.5 mg/m³)	100 ppm (367 mg/m³)	2-96	2-3	100-200	100-200	Up to 8	15	GC-FID	ST 226-37 49

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING† WEL TWA (ppm)	WEL STEL• (ppm)	Vol. (liter) TWA	Vol. (liter) STEL	Rate (ml/min) TWA	Rate (ml/min) STEL	Time TWA (hr)	Time STEL (min)	Analytical Method	SKC Collecting Equipment and Page No.
Methylcyclohexanol	MDHS 104 §	50 ppm (237 mg/m³)	75 ppm (356 mg/m³)	1-15	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Methylcyclohexanol	MDHS 88 ¥	50 ppm (237 mg/m³)	75 ppm (356 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
4,4'-Methylenedianiline (MDA)	MDHS 75/2	0.01 ppm (0.08 mg/m³)		200		2000		Up to 8		HPLC-UV	IOM 225-70A 121 FLT 225-58F‡ 108
Methyl formate	MDHS 88 ¥	50 ppm (125 mg/m³)	100 ppm (250 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
5-Methylheptan-3-one (5-Methyl-3-heptanone; Ethyl amyl ketone; EAK)	MDHS 104 §	10 ppm (53 mg/m³)	20 ppm (107 mg/m³)	1-25	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
5-Methylheptan-3-one (5-Methyl-3-heptanone; Ethyl amyl ketone; EAK)	MDHS 88 ¥	10 ppm (53 mg/m³)	20 ppm (107 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
5-Methylhexan-2-one (5-Methyl-2-hexanone; Methyl isoamyl ketone; MIAK)	MDHS 104 §	20 ppm (95 mg/m³)	100 ppm (475 mg/m³)	10		200		50 min		GC-FID, GC-MS	ST 226-01 48
5-Methylhexan-2-one (5-Methyl-2-hexanone; Methyl isoamyl ketone; MIAK)	MDHS 88 ¥	20 ppm (95 mg/m³)	100 ppm (475 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Methyl isocyanate (MIC) (as -NCO)	MDHS 25/4 Δ		0.02 ppm	480	15	1000	1000	8	15	HPLC	IMP 225-36-4 70 or IT 225-22 70 CST 225-1109 or FLT CONTACT IOM 225-79A 121 SKC
Methyl isocyanate (MIC) (as -NCO)	MDHS 25/4 **		0.02 ppm	960	30	2000	2000	8	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
Methyl isocyanate (MIC) (as -NCO) (vapour only)	MDHS 25/4		0.02 ppm	900	30	2000	2000	450 mins	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
Methyl methacrylate	MDHS 104	50 ppm (208 mg/m³)	100 ppm (416 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID	ST 226-357 52
Methyl methacrylate	MDHS 88 ¥	50 ppm (208 mg/m³)	100 ppm (416 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Methyl methacrylate	MDHS 96	50 ppm (208 mg/m³)	100 ppm (416 mg/m³)	1-8	1-8	10-50	10-50	Up to 8	15	GC-FID	ST 226-30-06 48
4-Methylpentan-2-ol (Methyl amyl alcohol; Methyl isobutyl carbinol)	MDHS 88 ¥	25 ppm (106 mg/m³)	40 ppm (170 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
4-Methylpentan-2-ol (Methyl amyl alcohol; Methyl isobutyl carbinol)	MDHS 104 §	25 ppm (106 mg/m³)	40 ppm (170 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
4-Methylpentan-2-one (Methyl isobutyl ketone; MIBK; Hexone; Isopropyl acetone)	MDHS 104	50 ppm (208 mg/m³)	100 ppm (416 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 or ST 226-358 52
4-Methylpentan-2-one (Methyl isobutyl ketone; MIBK; Hexone; Isopropyl acetone)	MDHS 104 §	50 ppm (208 mg/m³)	100 ppm (416 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
4-Methylpentan-2-one (Methyl isobutyl ketone; MIBK; Hexone; Isopropyl acetone)	MDHS 88 ¥	50 ppm (208 mg/m³)	100 ppm (416 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
2-Methylpropan-1-ol (Isobutanol; Isobutyl alcohol)	MDHS 104	50 ppm (154 mg/m³)	75 ppm (231 mg/m³)	1-2.8	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
2-Methylpropan-1-ol (Isobutanol; Isobutyl alcohol)	MDHS 104	50 ppm (154 mg/m³)	75 ppm (231 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358 52
2-Methylpropan-1-ol (Isobutanol; Isobutyl alcohol)	MDHS 104 §	50 ppm (154 mg/m³)	75 ppm (231 mg/m³)	2-10	2-3	20-500	20-500	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
2-Methylpropan-1-ol (Isobutanol; Isobutyl alcohol)	MDHS 88 ¥	50 ppm (154 mg/m³)	75 ppm (231 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
2-Methylpropan-2-ol (t-Butanol)	MDHS 104 §	100 ppm (308 mg/m³)	150 ppm (462 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
2-Methylpropan-2-ol (t-Butanol)	MDHS 72	100 ppm (308 mg/m³)	150 ppm (462 mg/m³)	2.5	2.5	5-200	5-200	Up to 8	15	GC-FID	ST 226-357 52
2-Methylpropan-2-ol (t-Butanol)	MDHS 88 ¥	100 ppm (308 mg/m³)	150 ppm (462 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
N-Methyl-2-pyrrolidone	MDHS 96	10 ppm (40 mg/m³)	20 ppm (80 mg/m³)	0.5-96	0.5-3	50-200	50-200	Up to 8	15	GC-NPD, GC- FID	ST 226-01 48
N-Methyl-2-pyrrolidone	MDHS 88 ¥	10 ppm (40 mg/m³)	20 ppm (80 mg/m³)	diffusive	diffusive	diffusive	diffusive				PS 575-001 82
Mica (respirable)	MDHS 14/4	0.8 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Mica (respirable)	MDHS 14/4	0.8 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Molybdenum compounds (insoluble) (as Mo)	ISO 15202:2020	10 mg/m³	20 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Molybdenum compounds (soluble) (as Mo)	ISO 15202:2020	5 mg/m³	10 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
NDI (1,5-Diisocyanatonaphthalene) (as -NCO) *(see Isocyanates)*	MDHS 25/4 Δ	0.02 mg/m³	0.07 mg/m³	480	15	1000	1000	8	15	HPLC	IMP 225-36-4 70 or IT 225-22 70 CST 225-1109 FLT CONTACT IOM 225-79A 121 SKC
NDI (1,5-Diisocyanatonaphthalene) (as -NCO) *(see Isocyanates)*	MDHS 25/4 **	0.02 mg/m³	0.07 mg/m³	960	15	2000	2000	8	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
NDI (1,5-Diisocyanatonaphthalene) (as -NCO) (vapour only) *(see Isocyanates)*	MDHS 25/4	0.02 mg/m³	0.07 mg/m³	900	30	2000	2000	450 mins	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
Nickel and its water-insoluble inorganic compounds (except nickel tetracarbonyl) (as Ni)	ISO 15202:2020	0.5 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Nickel and its water-soluble inorganic compounds (except nickel tetracarbonyl) (as Ni)	ISO 15202:2020	0.1 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING† WEL TWA (ppm)	WEL STEL• (ppm)	Vol. (liter) TWA	Vol. (liter) STEL	Rate (ml/min) TWA	Rate (ml/min) STEL	Time TWA (hr)	Time STEL (min)	Analytical Method	SKC Collecting Equipment and Page No.
Nicotine	MDHS 96	0.5 mg/m³	1.5 mg/m³	0.5-600	0.5-15	100-1000	100-1000	8	15	GC-NPD	ST 226-93 50
Nitrobenzene	MDHS 104	0.2 ppm (1 mg/m³)		3-6		50		1-2		TD, GC	ST 226-357 52
Nitrobenzene	MDHS 104 §	0.2 ppm (1 mg/m³)		10-96		20-200		Up to 8		GC-FID, GC-MS	ST 226-10 48
Nitroethane	MDHS 96	20 ppm (62 mg/m³)	100 ppm (312 mg/m³)	1.5-3	1.5-3	10-50	10-50	Up to 8	15	GC-FID	ST 226-3002A 48
2-Nitropropane	MDHS 96	5 ppm (18 mg/m³)		0.1-2		10-50		Up to 8		GC-FID	ST 226-110 50
Oil mist, from mineral	MDHS 84/2			960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
oil-based metalworking fluids											
Omethoate	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Osmium tetraoxide (as Os)	MDHS 91/2 ◊	0.0002 ppm (0.002 mg/m³)	0.0006 ppm (0.006 mg/m³)	960	30	2000	2000	8	15	XRFS	IOM 225-70A 121 FLT 225-1930 100
Paracetamol (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Paraquat dichloride (ISO) (respirable dust)	MDHS 14/4	0.08 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Paraquat dichloride (ISO) (respirable dust)	MDHS 14/4	0.08 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Pentaerythritol (inhalable dust)	MDHS 14/4	10 mg/m³	20 mg/m³	960	30	2000	2000	8	15	GR	IOM 225-70A 121 FLT 225-58F 108
Pentaerythritol (respirable dust)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Pentaerythritol (respirable dust)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Pentan-2-one (2-Pentanone; Methyl propyl ketone)	MDHS 88 ¥	200 ppm (716 mg/m³)	250 ppm (895 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Pentan-2-one (2-Pentanone; Methyl propyl ketone)	MDHS 104 §	200 ppm (716 mg/m³)	250 ppm (895 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Pentan-3-one (3-Pentanone; Diethyl ketone)	MDHS 88 ¥	200 ppm (716 mg/m³)	250 ppm (895 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Pentane	MDHS 104	600 ppm (1800 mg/m³)		1-5.5		20-100		Up to 2		GC-FID, GC-MS	ST 226-358 52
Pentane	MDHS 104 §	600 ppm (1800 mg/m³)		4		20-200		Up to 8		GC-FID, GC-MS	ST 226-01 48
Pentane	MDHS 88 ¥	600 ppm (1800 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Pentyl acetates (all isomers) (Amyl acetates)	MDHS 88 ¥	50 ppm (270 mg/m³)	100 ppm (541 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Pentyl acetates (all isomers) (Amyl acetates)	MDHS 104 §	50 ppm (270 mg/m³)	100 ppm (541 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Permethrin	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Peroxodisulphate salts	MDHS 79/2			960		2000		8		IC	IOM 225-70A 121 FLT 225-1911 100
2-Phenylpropene (alpha-Methyl styrene)	MDHS 104	50 ppm (246 mg/m³)	100 ppm (491 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
2-Phenylpropene (alpha-Methyl styrene)	MDHS 88 ¥	50 ppm (246 mg/m³)	100 ppm (491 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Phosalone	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Phosphorus, yellow	ISO 15202:2020	0.1 mg/m³	0.3 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Phthalic anhydride (PA)	MDHS 62/2	4 mg/m³	12 mg/m³	960	30	2000	2000	8	15	HPLC-UV	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Pirimiphos-Methyl	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Plaster of Paris (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Plaster of Paris (respirable dust)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Plaster of Paris (respirable dust)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Platinum compounds, soluble (except certain halogeno-Pt compounds) (as Pt)	MDHS 91/2 ◊	0.002 mg/m³		960		2000		8		XRFS	IOM 225-70A 121 FLT 225-1930 100
Platinum compounds, soluble (except certain halogeno-Pt compounds) (as Pt)	ISO 15202:2020	0.002 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Platinum metal	MDHS 91/2 ◊	5 mg/m³		960		2000		8		XRFS	IOM 225-70A 121 FLT 225-1930 100
Platinum metal	ISO 15202:2020	5 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Polyvinyl chloride (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Polyvinyl chloride (respirable dust)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Polyvinyl chloride (respirable dust)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Portland cement (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Portland cement (respirable dust)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING†								Analytical Method	SKC Collecting Equipment and Page No.
		WEL		Vol. (liter)		Rate (ml/min)		Time			
		TWA (ppm)	STEL• (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)		
Portland cement (respirable dust)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Potassium hydroxide	ISO 15202:2020		2 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Propan-1-ol (n-Propanol)	MDHS 104	200 ppm (500 mg/m³)	250 ppm (625 mg/m³)	1-8	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358 52
Propan-1-ol (n-Propanol)	MDHS 88 ¥	200 ppm (500 mg/m³)	250 ppm (625 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Propan-2-ol (2-Propanol; Isopropanol; Isopropyl alcohol)	MDHS 104	400 ppm (999 mg/m³)	500 ppm (1250 mg/m³)	1-4.4	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358 52
Propan-2-ol (2-Propanol; Isopropanol; Isopropyl alcohol)	MDHS 88 ¥	400 ppm (999 mg/m³)	500 ppm (1250 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Propan-2-ol (2-Propanol; Isopropanol; Isopropyl alcohol)	MDHS 104 §	400 ppm (999 mg/m³)	500 ppm (1250 mg/m³)	0.3-3	0.3-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Propane-1,2-diol (particulates)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Propionaldehyde	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST 226-119 or ST 226-120 50
Propionaldehyde	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS 500-100 92
Propranolol	MDHS 14/4	2 mg/m³	6 mg/m³	960	30	2000	2000	8	15	GR	IOM 225-70A 121 FLT 225-58F 108
n-Propyl acetate (1-Propyl acetate)	MDHS 104 §	200 ppm (849 mg/m³)	250 ppm (1060 mg/m³)	1-10	1-3	20-200	10-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
n-Propyl acetate (1-Propyl acetate)	MDHS 104	200 ppm (849 mg/m³)	250 ppm (1060 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 or ST 226-358 52
n-Propyl acetate (1-Propyl acetate)	MDHS 88 ¥	200 ppm (849 mg/m³)	250 ppm (1060 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Propylene oxide	MDHS 104	1 ppm (2.4 mg/m³)		1		20-100		Up to 0.8		GC-FID, GC-MS	ST 226-358 52
Propylene oxide	MDHS 88 ¥	1 ppm (2.4 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Propylene oxide	MDHS 96	1 ppm (2.4 mg/m³)		0.5-5		10-200		Up to 8		GC-FID	ST 226-01 48
Pulverized fuel ash (inhalable dust)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Pulverized fuel ash (respirable dust)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Pulverized fuel ash (respirable dust)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Pyridine	MDHS 104	5 ppm (16 mg/m³)	10 ppm (33 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
Pyridine	MDHS 88 ¥	5 ppm (16 mg/m³)	10 ppm (33 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Pyridine	MDHS 96	5 ppm (16 mg/m³)	10 ppm (33 mg/m³)	18-150	15	100-1000	1000	8	15	GC-FID	ST 226-01 48
Pyrocatechol (Catechol)	MDHS 104 §	5 ppm (23 mg/m³)		100		1000		100 min		GC-FID, GC-MS	ST 226-57 49
Refractory ceramic fibres (RCF) & special purpose fibres (total inhalable)	MDHS 59/2	5 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Refractory ceramic fibres (RCF) & special purpose fibres (respirable fraction)	MDHS 59/2	0.3 fibre/ml		480		1000		8		PCM	FLT/CL 225-54A or FLT/CL 225-54 or FLT 225-1913 100
Resorcinol	MDHS 104 §	10 ppm (46 mg/m³)	20 ppm (92 mg/m³)	5-160	5-160	200-1000	200-1000	Up to 8	15	GC-FID, GC-MS	ST 226-57 49
Rhodium metal fume & dust (as Rh)	ISO 15202:2020	0.1 mg/m³	0.3 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Rhodium soluble salts (as Rh)	ISO 15202:2020	0.001 mg/m³	0.003 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Rock wool mineral fibre *(see MMMF)* (as inhalable dust)	MDHS 59/2 (MDHS 14/4)	5 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Rock wool mineral fibre *(see MMMF)* (as respirable fibres)	MDHS 59/2	2 fibres/ml		480		1000		8		PCM	FLT/CL 225-54A or FLT/CL 225-54 or FLT 225-1913 100
Rosin-based solder flux fume (Colophony)	MDHS 83/3	0.05 mg/m³	0.15 mg/m³	960	30	2000	2000	8	15	GC-FID	H/SET 225-6200 117 MINI 225-6201 117 CAL 225-6202 117 FLT 225-8050 100
Rouge (total inhalable)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Rouge (respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Rouge (respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Rouge (total inhalable)	ISO 15202:2020	10 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Rouge (respirable)	ISO 15202:2020	4 mg/m³		1440		3000		8		ICP-AES	CYC 225-69 124 FLT 225-1930 100
Rouge (respirable)	ISO 15202:2020	4 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100 FOAM 225-772 121
Rubber fume (as cyclohexane-soluble material)	MDHS 47/3	0.6 mg/m³		960		2000		8		GR, SE	IOM 225-70A 121 FLT 225-58F‡ 108
Rubber process dust (with rubber fume determined from same sample)	MDHS 47/3	6 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F‡ 108
Rubber process dust (only)	MDHS 14/4	6 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Selenium & compounds (except hydrogen selenide) (as Se)	ISO 15202:2020	0.1 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Silica, amorphous (inhalable dust)	MDHS 14/4	6 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Silica, amorphous (respirable dust)	MDHS 14/4	2.4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING† WEL TWA (ppm)	WEL STEL• (ppm)	Vol. (liter) TWA	Vol. (liter) STEL	Rate (ml/min) TWA	Rate (ml/min) STEL	Time TWA (hr)	Time STEL (min)	Analytical Method	SKC Collecting Equipment and Page No.
Silica, amorphous (respirable dust)	MDHS 14/4	2.4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Silica, fused (respirable dust)	MDHS 14/4	0.08 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Silica, fused (respirable dust)	MDHS 14/4	0.08 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Silica, respirable crystalline (respirable fraction) (RCS; Cristobalite, respirable; Quartz, respirable)	MDHS 101/2	0.1 mg/m³		1440		3000		8		IR, XRD	CYC 225-69 124 FLT 225-5-25 105
Silicon (total inhalable)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Silicon (total respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Silicon (total respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Silicon carbide (not whiskers) (total inhalable)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Silicon carbide (not whiskers) (total respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Silicon carbide (not whiskers) (total respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Silver (soluble compounds as Ag)	ISO 15202:2020	0.01 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Silver metallic	ISO 15202:2020	0.1 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Slag wool mineral fibre (as inhalable dust)	MDHS 59/2 (MDHS 14/4)	5 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Slag wool mineral fibre (as MMMF) (as respirable fibres)	MDHS 59/2	2 fibres/ml		480		1000		8		PCM	FLT/CL 225-54A or FLT/CL 225-54 or FLT 225-1913 100
Softwood dust	MDHS 14/4	5 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Starch (respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Starch (respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Starch (total inhalable)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Styrene	MDHS 104	100 ppm (430 mg/m³)	250 ppm (1080 mg/m³)	1-10	1-1.5	20-100	20-00	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
Styrene	MDHS 88 ¥	100 ppm (430 mg/m³)	250 ppm (1080 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-006 82
Styrene	MDHS 104 §	100 ppm (430 mg/m³)	250 ppm (1080 mg/m³)	1-14	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Sucrose	MDHS 14/4	10 mg/m³	20 mg/m³	960	30	2000	2000	8	15	GR	IOM 225-70A 121 FLT 225-58F 108
Talc (respirable dust)	MDHS 14/4	1 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Talc (respirable dust)	MDHS 14/4	1 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Tantalum	MDHS 91/2 ◊	5 mg/m³	10 mg/m³	960		2000		8		XRFS	IOM 225-70A 121 FLT 225-1930 100
Tantalum	ISO 15202:2020	5 mg/m³	10 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
2,4-TDI (2,4-Toluene diisocyanate) (as -NCO) *(see Isocyanates)*	MDHS 25/4 Δ	0.02 mg/m³	0.07 mg/m³	480	15	1000	1000	8	15	HPLC	IMP 225-36-4 70 IT 225-22 70 CST 225-1109 or FLT CONTACT IOM 225-79A 121 SKC
2,4-TDI (2,4-Toluene diisocyanate) (as -NCO) *(see Isocyanates)*	MDHS 25/4 **	0.02 mg/m³	0.07 mg/m³	960	15	2000	2000	8	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
2,4-TDI (2,4-Toluene diisocyanate) (as -NCO) (vapour only) *(see Isocyanates)*	MDHS 25/4	0.02 mg/m³	0.07 mg/m³	900	30	2000	2000	450 mins	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
2,6-TDI (2,6-Toluene diisocyanate) (as -NCO) *(see Isocyanates)*	MDHS 25/4 Δ	0.02 mg/m³	0.07 mg/m³	480	15	1000	1000	8	15	HPLC	IMP 225-36-4 70 IT 225-22 70 CST 225-1109 or FLT CONTACT IOM 225-79A 121 SKC
2,6-TDI (2,6-Toluene diisocyanate) (as -NCO) *(see Isocyanates)*	MDHS 25/4 **	0.02 mg/m³	0.07 mg/m³	960	15	2000	2000	8	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
2,6-TDI (2,6-Toluene diisocyanate) (as -NCO) (vapour only) *(see Isocyanates)*	MDHS 25/4	0.02 mg/m³	0.07 mg/m³	900	30	2000	2000	450 mins	15	HPLC	IOM 225-79A 121 FLT CONTACT SKC
Tellurium & compounds (except hydrogen telluride) as Te	ISO 15202:2020	0.1 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
1,1,2,2-Tetrabromoethane	MDHS 96	0.5 ppm (7.2 mg/m³)		50-100		20-1000		Up to 8		GC-FID	ST 226-10 48
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)	MDHS 104	20 ppm (138 mg/m³)	40 ppm (275 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)	MDHS 88 ¥	20 ppm (138 mg/m³)	40 ppm (275 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)	MDHS 104 §	20 ppm (138 mg/m³)	40 ppm (275 mg/m³)	1-40	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Tetrachlorophthalic anhydride (TCPA)	MDHS 62/2			960		2000		8		HPLC-UV	IOM ST 225-70A 121 FLT 225-58F 108 226-35-01 48
Tetradifon	MDHS 94/2			960		2000		8		GC-MS	IOM ST 225-70A 121 FLT 225-58F 108 226-35-01 48

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING† WEL TWA (ppm)	WEL STEL• (ppm)	Vol. (liter) TWA	Vol. (liter) STEL	Rate (ml/min) TWA	Rate (ml/min) STEL	Time TWA (hr)	Time STEL (min)	Analytical Method	SKC Collecting Equipment and Page No.
Tetrahydrofuran	MDHS 88 ¥	50 ppm (150 mg/m³)	100 ppm (300 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Tetrahydrofuran	MDHS 96	50 ppm (150 mg/m³)	100 ppm (300 mg/m³)	1-9	1-3	10-200	10-200	Up to 8	15	GC-FID	ST 226-01 48
Thallium (soluble compounds) (as Tl)	ISO 15202:2020	0.1 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Tin compounds (inorganic, except SnH4) (as Sn)	ISO 15202:2020	2 mg/m³	4 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Tin compounds (organic, except Cyhexatn (ISO)) (as Sn)	ISO 15202:2020	0.1 mg/m³	0.2 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Titanium dioxide (total inhalable)	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Titanium dioxide (total inhalable)	ISO 15202:2020	10 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Titanium dioxide (respirable)	ISO 15202:2020	4 mg/m³		1440		3000		8		ICP-AES	CYC 225-69 124 FLT 225-1930 100
Titanium dioxide (respirable)	ISO 15202:2020	4 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100 FOAM 225-772 121
Titanium dioxide (respirable)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Titanium dioxide (respirable)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
o-, m-, p-Tolualdehyde	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST 226-119 or ST 226-120 50
o-Tolualdehyde	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS 500-100 92
Toluene	MDHS 104	50 ppm (191 mg/m³)	100 ppm (384 mg/m³)	1-10	1.0-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 or ST 226-358 52
Toluene	MDHS 104	50 ppm (191 mg/m³)	100 ppm (384 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID, GC-MS	ST 226-521 97
Toluene	MDHS 88 ¥	50 ppm (191 mg/m³)	100 ppm (384 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Toluene	MDHS 104 §	50 ppm (191 mg/m³)	100 ppm (384 mg/m³)	1-8	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
o-Toluidine (2-methylaniline)	MDHS 75/2	0.1 ppm (0.5 mg/m³)		200		2000		Up to 8		HPLC-UV	IOM 225-70A 121 FLT 225-58F‡ 108 ST 226-35 48
o-Toluidine (2-methylaniline)	MDHS 104 §	0.1 ppm (0.5 mg/m³)		10-150		20-200		Up to 8		GC-FID, GC-MS	ST 226-10 48
Tolylfluanid	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Triazophos	MDHS 94/2			960		2000		8		GC-MS	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
1,1,1-Trichloroethane	MDHS 104	100 ppm (555 mg/m³)	200 ppm (1110 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358 52
1,1,1-Trichloroethane	MDHS 104 §	100 ppm (555 mg/m³)	200 ppm (1110 mg/m³)	0.1-8	0.1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
1,1,1-Trichloroethane	MDHS 88 ¥	100 ppm (555 mg/m³)	200 ppm (1110 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Trichloroethylene (1,1,2-Trichloroethene)	MDHS 104 §	100 ppm (550 mg/m³)	150 ppm (820 mg/m³)	0.2-30	0.2-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Trichloroethylene (1,1,2-Trichloroethene)	MDHS 104	100 ppm (550 mg/m³)	150 ppm (820 mg/m³)	1-5.6	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
Trichloroethylene (1,1,2-Trichloroethene)	MDHS 104	100 ppm (550 mg/m³)	150 ppm (820 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-358 52
Trichloroethylene (1,1,2-Trichloroethene)	MDHS 88 ¥	100 ppm (550 mg/m³)	150 ppm (820 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Triglycidyl isocyanurate (TGIC)	MDHS 85/2	0.1 mg/m³		200		2000		100 min		HPLC-UV	IOM 225-70A 121 FLT 225-58F 108
Trimellitic anhydride (TMA; 1,2,4-Benzenetricarboxylic anhydride)	MDHS 62/2	0.04 mg/m³	0.12 mg/m³	960	30	2000	2000	8	15	HPLC-UV	IOM 225-70A 121 FLT 225-58F 108 ST 226-35-01 48
Trimethylbenzenes (all isomers or mixtures)	MDHS 104	25 ppm (125 mg/m³)		1-10		20-100		Up to 2		GC-FID, GC-MS	ST 226-357 or ST 226-358 52
Trimethylbenzenes (all isomers or mixtures)	MDHS 104 §	25 ppm (125 mg/m³)		12		50		4		GC-FID, GC-MS	ST 226-01 48
Trimethylbenzene (all isomers or mixtures)	MDHS 88 ¥	25 ppm (125 mg/m³)		diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
3,5,5-Trimethylcyclohex-2-enone	MDHS 104		5 ppm (29 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 52
3,5,5-Trimethylcyclohex-2-enone	MDHS 96		5 ppm (29 mg/m³)	2-25	2-3	10-1000	10-1000	Up to 8	15	GC-FID	ST 226-93 50
3,5,5-Trimethylcyclohex-2-enone	MDHS 88 ¥		5 ppm (29 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Tungsten & insoluble compounds & others (as W)	ISO 15202:2020	5 mg/m³	10 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Tungsten & soluble compounds (as W)	ISO 15202:2020	1 mg/m³	3 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Turpentine	MDHS 104 §	100 ppm (566 mg/m³)	150 ppm (850 mg/m³)	1-10	1-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Valeraldehyde	MDHS 102			48-480		100-1000		8		HPLC-PDA	ST 226-119 or ST 226-120 50
Valeraldehyde	MDHS 102			diffusive	diffusive	diffusive	diffusive			HPLC-PDA	PS 500-100 92
Vanadium pentoxide	ISO 15202:2020	0.05 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Vinyl acetate	MDHS 88 ¥	5 ppm (17.6 mg/m³)	10 ppm (35.2 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-002 82
Vinyl chloride	MDHS 104 §	1 ppm (2.6 mg/m³)		0.7-5		50		Up to 8		GC-FID, GC-MS	ST 226-01 √ 48

See page 244 for abbreviations.

Chemical Hazard	Agency Reference	SAMPLING†								Analytical Method	SKC Collecting Equipment and Page No.
		WEL		Vol. (liter)		Rate (ml/min)		Time			
		TWA (ppm)	STEL• (ppm)	TWA	STEL	TWA	STEL	TWA (hr)	STEL (min)		
Vinylidene chloride (1,1-dichloroethene)	MDHS 88 ¥	2 ppm (8 mg/m³)	5 ppm (20 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 82
Vinylidene chloride (1,1-dichloroethene)	MDHS 104 §	2 ppm (8 mg/m³)	5 ppm (20 mg/m³)	2.5-7	2.5-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Welding fume	ISO 10882-1:2011	See specific components		varies		750		varies		GR & others	H/SET 225-6200 117 MINI 225-6201 117 CAL 225-6202 117 FLT 225-8050 100
Wood dust	MDHS 14/4	See Hardwood / Softwood dust									
Wool process dust	MDHS 14/4	10 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108
Xylene (o-,m-,p-,or mixed isomers)	MDHS 104	50 ppm (220 mg/m³)	100 ppm (441 mg/m³)	1-10	1-1.5	20-100	20-100	Up to 2	15	GC-FID, GC-MS	ST 226-357 or ST 226-358 52
Xylene (o-,m-,p-, or mixed isomers)	MDHS 88 ¥	50 ppm (220 mg/m³)	100 ppm (441 mg/m³)	diffusive	diffusive	diffusive	diffusive			GC-FID	PS 575-001 or PS 575-002 82
Xylene (o-,m-,p-, or mixed isomers)	MDHS 104 §	50 ppm (220 mg/m³)	100 ppm (441 mg/m³)	2-23	2-3	20-200	20-200	Up to 8	15	GC-FID, GC-MS	ST 226-01 48
Yttrium	ISO 15202:2020	1 mg/m³	3 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Zinc chloride (fume)	ISO 15202:2020	1 mg/m³	2 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Zinc distearate (inhalable dust)	MDHS 14/4	10 mg/m³	20 mg/m³	960	30	2000	2000	8	15	GR	IOM 225-70A 121 FLT 225-58F
Zinc distearate (inhalable dust)	ISO 15202:2020	10 mg/m³	20 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100
Zinc distearate (respirable dust)	MDHS 14/4	4 mg/m³		1440		3000		8		GR	CYC 225-69 124 FLT 225-58F 108
Zinc distearate (respirable dust)	MDHS 14/4	4 mg/m³		960		2000		8		GR	IOM 225-70A 121 FLT 225-58F 108 FOAM 225-772 121
Zinc distearate (respirable dust)	ISO 15202:2020	4 mg/m³		1440		3000		8		ICP-AES	CYC 225-69 124 FLT 225-1930 100
Zinc distearate (respirable dust)	ISO 15202:2020	4 mg/m³		960		2000		8		ICP-AES	IOM 225-70A 121 FLT 225-1930 100 FOAM 225-772 121
Zirconium compounds (as Zr)	ISO 15202:2020	5 mg/m³	10 mg/m³	960	30	2000	2000	8	15	ICP-AES	IOM 225-70A 121 FLT 225-1930 100

√ This application requires two tubes.

** MDHS 25/4 Appendix 2 alternative sampler — limitations apply, refer to method.

• From EH40/2005: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used

† The sampling parameters shown are suggestions based on the equipment, materials, ranges of volume, flow rate and time specified in the method. It is the responsibility of those performing the sampling and analysis to select suitable sampling parameters, method and equipment for their application.

§ MDHS 104 Method 3 — sampling flow rates, sampling times and analysis for specific analytes sourced from the US regulatory authorities.

Δ An alternative published method avoiding the use of an impinger is advisable where there is a risk of spillage of the impinger solution during personal sampling

◊ Analysis using L spectral lines for elements with atomic numbers under 82 may be semi-quantitative or qualitative. Refer to MDHS 91/2.

♣ Exposure limit for 'process generated' Chromium (VI) compounds is 0.025 mg/m³.

‡ Filter must be chemically treated prior to sampling.

Exposure limit applies to "lead other than lead alkyls". Lead alkyls have an occupational exposure limit of 0.1 mg/m³. Refer to Control of Lead at Work Regulations.

¥ Refer to SKC VOC Chek Passive Sampler Selection Guide

SKC Europe

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Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Acenaphthene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m^3 (max)		225 L/min		1-24		GC-MS	PUF 226-131 55 FLT 225-1808 107
Acenaphthene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
Acenaphthene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-UV	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
Acenaphthene (1,2-dihydroacenaphthylene; 1,8-ethylenenapthylene) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m^3 (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST 226-57 49
Acenaphthylene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
Acenaphthylene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m^3 (max)		225 L/min		1-24		GC-MS	PUF 226-131 55 FLT 225-1808 107
Acenaphthylene (Acenaphthalene; cyclopenta[de] naphthalene) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m^3 (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST 226-57 49
Acenaphthylene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-UV	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
Acetaldehyde	ASTM D 5197			varies		500-1200		5 min-24 hrs		HPLC-UV	ST 226-120 o or ST 226-119 50
Acetaldehyde	NIOSH 2538	LFC		10		20		8		GC-FID	ST 226-27 48
Acetaldehyde	NIOSH 3507	LFC		60		125		8		HPLC	IMP 225-36-2 70 IT 225-22 70
Acetaldehyde	OSHA 68	200		3	0.75	50	50	1	15	GC-NPD	ST 226-27 48
Acetaldehyde (Aldehydes, Screening)	NIOSH 2539	LFC		5		10		8		GC-FID & GC-MS	ST 226-118 50
Acetamide	OSHA PV2084			10		20(50)		8(3.3)		GC-NPD	ST 226-10 48
Acetates (screening)	NIOSH 2549			1-6		10-50		varies		TD, GC-MS	ST 226-330 52
Acetic acid	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Acetic acid	NIOSH 1603	10	15	24		50		8		GC-FID	ST 226-01 48
Acetic acid	NON 61	10				16.67		*see method*		IC	PS 500-200 93
Acetic acid	OSHA PV2119			48		200		4		IC or GC-FID	ST 226-01 48
Acetic anhydride	NIOSH 3506		5	90		1000		1.5		VAS	IMP 225-36-2 70 IT 225-22 70
Acetic anhydride	OSHA 102	5		7.5	7.5	50	500	2.5	15	GC-NPD	F/CST 225-9010 68 C/HLD 225-1 114
Acetoin	NIOSH 2558			1-10		10-200		varies		GC-FID	ST 226-183 51
Acetoin (acetyl methyl carbinol)	OSHA 1012	0.05		9	3	50	200	3	15	GC-FID	ST 226-183 51
Acetone	ASTM D 5197			varies		500-1200		5 min-24 hrs		HPLC-UV	ST 226-120 ° or ST 226-119 50
Acetone	Internal					15.2		8-24 hrs		SE, GC	PS 690-105 96
Acetone	OSHA 69	1000		3		50		1		GC-FID	ST NA SKC
Acetone (Ketones I)	NIOSH 1300	250		0.5-3	0.75	10-200	50	25 min-2.5 hrs	15	GC-FID	ST 226-01 48
Acetone (Ketones I)	NIOSH 2555	250		0.5 - 3		10-200	50	25 min-2.5 hrs	15	GC-FID	ST NA SKC
Acetonitrile	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Acetonitrile	NIOSH 1606	20		1 at 40 ppm to 25		10-200	50	100-125 mins		GC-FID	ST 226-09 48
Acetophenone	OSHA PV2003			12		100		2		GC-FID	ST 226-35 48
Acetyl methyl carbinol (acetoin)	NIOSH 2558			1-10		10-200		50-100 mins		GC-FID	ST NA SKC
Acetylene tetrabromide (1,1,2,2-tetrabromoethane)	NIOSH 2003			50 at 1 ppm to 100		200-1000		100-250 mins		GC-FID	ST 226-10 48
Acid blue 9	OSHA PV2129	0.2 mg/m^3 (Target Concentration)		100		1000		100 min		HPLC-UV	F/CST 225-706 108 C/HLD 225-1 114
Acridine	OSHA 58	0.2 mg/m^3		960		2000		8		GR & HPLC-FD, or GR & HPLC-UV	FLT 225-7 108 CST 225-2LF 113 C/HLD 225-1 114
Acrolein	NIOSH 2501	0.1	0.3	13 at 0.1 to 48		10-100	200	8	15	GC-NPD	ST 226-118 50
Acrolein	OSHA 52	0.1		48	3	100		8	15	GC-NPD	ST 226-117 50

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Acrolein (Aldehydes, Screening)	NIOSH 2539	0.1	0.3	5		10-50		8		GC-FID & GC-MS	ST 226-118 50
Acrylamide	OSHA PV2004	0.3 mg/m³		120		1000		2		HPLC-UV	ST 226-57 49
Acrylic acid	NON 10			48		100		8		GC	ST 226-70A 49
Acrylic acid	NON 60			24		100		4		HPLC-UV	ST 226-30-08 48
Acrylic acid	OSHA PV2005	2 (target concentration)		20		100		4		LC-UV	ST 226-30-08 48
Acrylonitrile	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Acrylonitrile	Internal					20.4 ml/min		8-24 hrs		TD, GC	PS 690-101 96
Acrylonitrile	Internal					20.4 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Acrylonitrile	NIOSH 1604	1	10 (15 min)	3.5-20 ♣	3	20(50)	10-200	8	15	GC-FID	ST 226-01 48
Acrylonitrile	OSHA 37	2		20		200		100 min	15	GC-NPD	ST 226-01 48
Actinomycetes, thermophilic	NIOSH 0800			varies		28,300		varies		varies	BI 225-9611 134
Aerobic bacteria (by GC-FAME)	NIOSH 0801	varies with Compound		50-300		28300		varies		GC-FID	BI 225-9611 134
Alcohols (screening)	NIOSH 2549	varies with Compound		1-6		10-50		100 mins-2 hrs		TD, GC-MS	ST 226-330 52
Alcohols combined	NIOSH 1405	varies	varies	varies	varies	10-200	10-200	varies	varies	GC-FID	ST 226-01 48
Alcohols I *(see specific compounds)*	NIOSH 1400	varies		varies		varies		varies		GC-FID	ST 226-01 48
Alcohols II *(see specific compounds)*	NIOSH 1401	varies		varies		varies		8		GC-FID	ST 226-01 48
Alcohols III *(see specific compounds)*	NIOSH 1402	varies		1-10		10-20		8		GC-FID	ST 226-01 48
Alcohols IV *(see specific alcohol)*	NIOSH 1403	varies		varies		varies		varies		GC-FID	ST 226-01 48
Aldehydes	EPA TO-5			< 80 L		100-1000 ml/min				HPLC-UV	IMP 225-36-1 70 IT 225-22 70
Aldehydes (screening)	NIOSH 2539	varies		5		10-50		4		GC-FID & GC-MS	ST 226-118 50
Aldehydes (screening)	NIOSH 2549	varies		1-6		10-50		varies		TD, GC-MS	ST 226-330 52
Aldicarb (Organonitrogen Pesticides)	NIOSH 5601			240		1000		4		HPLC-UV	ST 226-58 or ST 226-30-16 48
Aldicarb (Temik)	OSHA 74			480		1000		8		GC-NPD	ST 226-30-16 48
Aldrin	NIOSH 5502	0.25 mg/m³		18-240 ♣		200-1000		90 mins-4 hrs		GC-ECN	F/CST 225-709 108 IMP 225-36-2 70 IT 225-22 70 C/HLD 225-1 114
Aliphatic hydrocarbons (screening)	NIOSH 2549	varies		1-6		10-50		varies		TD, GC-MS	ST 226-330 52
Alkaline dusts	NIOSH 7401	2 mg/m³ (NaOH)		70-1000 ♣	30	1000-4000			70 mins-4 hrs	TITRA	F/CST 225-1715 106 C/HLD 225-1 114
Allyl alcohol	OSHA PV2140	2 (skin)		10		50		200 min		GC-FID	ST 226-01 48
Allyl alcohol (Alcohols Combined)	NIOSH 1405	2	4 (skin)	varies	varies	2000-10000		varies		GC-FID	ST 226-01 48
Allyl alcohol (Alcohols III)	NIOSH 1402	2	4 (skin)	1-10	3	200	10	100-8 hrs	15	GC-FID	ST 226-01 48
Allyl amine						22		8 hrs		HPLC-UV	PS 500-400 92
Allyl chloride	NIOSH 1000	1	2		16-100 ♣	10-1000			15	GC-FID	ST 226-01 48
Allyl glycidyl ether	NIOSH 2545	5	10 (skin)	1.5-8 ♣	3	10-200		40-150		GC-FID	ST 226-35-03 48
Allyl propyl disulfide	OSHA PV2086	2		10		20 ♣		50		GC-FPD	ST 226-110 50
Alumina (aluminum & compounds [total dust as Al])	NIOSH 7013	10-400		360		1000-3000		2-6		AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Alumina (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	CYC 225-01-02 125 C/HLD 225-1 114 F/CST 225-803 105
Alumina (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
alpha-Alumina (respirable fraction)	OSHA PV2121	5 mg/m³		varies		varies		varies		GR	CYC 225-105 124 F/CST 225-803 105 C/HLD 225-1 114
alpha-Alumina (total dust)	OSHA PV2121	15 mg/m³		960		2000		4-8		GR	F\CST 225-802 105 C/HLD 225-1 114
Aluminum (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	10 mg/m³ (total dust)	5 mg/m³ (respirable)	1-330		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Aluminum & compounds (total dust as Al)	NIOSH 7013	10 mg/m³		360		1000		6		AA-F	F/CST 225-3-01 or F/CST 225-508 100 C/HLD 225-1 114
Aluminum (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	10 mg/m³ (total dust)		5-100		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-8408 or F/CST 225-508 100
Aluminum (Elements by ICP Hot Block/HCl/HNO_3 Digestion)	NIOSH 7303	10 mg/m³ (total dust) 5 mg/m³ (respirable fume)		2-10,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-508 100 C/HLD 225-1 114

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞															
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time									
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number						
Aluminum (Elements by ICP $HNO_3/HClO_4$ Ashing)	NIOSH 7300	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)		5-100		1000-4000		varies		ICP-AES	F/CST C/HLD	225-508 225-1	or 114	F/CST	225-3-01	100	
Aluminum (respirable fraction)	OSHA PV2121	5 mg/m³		varies		varies		varies		GR	F/CST C/HLD	225-803 225-1	105 114	CYC	225-105	124	
Aluminum (total dust)	OSHA PV2121	15 mg/m³		480-960		2000		4-8		GR	F/CST CST	225-802 225-2LF	105 113	C/HLD	225-1	114	
Aluminum soluble salts	OSHA ID 121	2 mg/m³		960		2000		8		AA or AES	F/CST F/CST	225-508 225-3-01	or 100	F/CST C/HLD	225-802 225-1	or 114	
Amines, aromatic	NIOSH 2002	varies		varies		varies		varies		GC-FID or GC-NSD	ST	226-10	48				
Amines, aliphatic	NIOSH 2010	varies		24		50		8		GC-FID	ST	226-10	48				
2-Amino-2-methy-1-propanol	OSHA PV2145			10		100		100 min		LC-UV	ST	226-30-16	48				
4-Aminobiphenyl	OSHA 93			100		1000		100 min		GC-ECD	CF/CST	225-9004	68	C/HLD	225-1	114	
2-Aminoethanol	OSHA PV2111	3		10	1.5	100	100	100 min	15	HPLC-UV	ST	226-30-18	48				
Aminoethanol compounds I *(see specific compounds)*	NIOSH 2007	varies		varies		varies		8		GC-FID	ST	226-10-04	48				
Aminoethanol compounds II *(see specific compounds)*	NIOSH 3509	varies		240		1000		4		IC	IMP	225-36-1	70	IT	225-22	70	
Aminoethylethanolamine	OSHA PV2116			10		100		100 min		LC-UV	ST	226-30-18	48				
p-Aminophenylarsonic acid (arsenic, organo-)	NIOSH 5022			960		2000		8		IC-AA	FLT C/HLD	225-17-01 225-1	106 114	CST	225-3LF	113	
2-Aminopyridine	OSHA PV2143	0.5		240		1000		4		GC-NPD	CF/CST	225-9004	68	C/HLD	225-1	114	
3-Aminopyridine	OSHA PV2143			240		1000		4		GC-NPD	CF/CST	225-9004	68	C/HLD	225-1	114	
4-Aminopyridine	OSHA PV2143			240		1000		4		GC-NPD	CF/CST	225-9004	68	C/HLD	225-1	114	
Amitrole	OSHA PV2006			60		1000		1		HPLC-UV	IMP	225-36-1	70	IT	225-22	70	
Ammonia	NIOSH 6015	25	35	72	3	150	200	8	15	VAS	ST	226-10-06	48	F/CST	225-3-01	100	
Ammonia	NON 41			18	5	75	500	4	10	CLR	ST	226-61	49				
Ammonia	OSHA ID 188	50		24	7.5	100	500	4	15	IC-CD	ST	226-29	48				
Ammonia (by IC)	NIOSH 6016	25	35	48	3	100	200	8	15	IC	ST	226-10-06	48	F/CST	225-3-01**	100	
Ammonium chloride (fume)	OSHA ID 188			960	30	2000	2000	8	15	IC-CD	F/CST	225-3-01	100	C/HLD	225-1	114	
Ammonium hydroxide *(see ammonia)*																	
Ammonium metavanadate *(see vanadium oxides)*	NIOSH 7504																
sec-Amyl acetate (2-pentyl acetate)	NIOSH 1450	125		10		200		50 (min)		GC-FID	ST	226-01	48				
n-Amyl acetate (Esters I)	NIOSH 1450	100		1-10		10-200		varies		GC-FID	ST	226-01	48				
t-Amyl methyl ether (methyl tert-amyl ether)	Internal					13.1 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-103	96	
t-Amyl methyl ether (methyl tert-amyl ether)	Internal					13.1 ml/min		8-24 hrs		SE, GC	PS	690-105	96				
Aniline	NIOSH 2017	LFC		5-50		200		25 min-4 hrs		GC-FID	CF/CST	225-9004	68	ST	226-15	48	
Aniline	OSHA PV2079	5		30		50		8		GC-FID	ST	226-98	50				
Aniline (Amines, Aromatic)	NIOSH 2002	lowest feasible (carcinogen)		5-30		20-200		25 min-8 hrs		GC-FID or GC-NSD	ST	226-10	48				
Anisidine	NIOSH 2514	0.5 mg/m³		EPA		500-1000		24 min- 8 hrs		HPLC-UV	ST	226-30-05	48				
Anthophyllite fibers *(see asbestos fibers)*	NIOSH 7400																
Anthracene	OSHA 58	0.2 mg/m³		960		2000		8		GR & HPLC-FD, or GR & HPLC-UV	FLT C/HLD	225-7 225-1	108 114	CST	225-2LF	113	
Anthracene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m³ (max)		225 L/min		1-24		GC-MS	PUF	226-131	55	FLT	225-1808	107	
Anthracene (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)																	
Anthracene (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m³ (cyclohexane soluble fraction)		1-8		1000		1 min-8 hrs		GC-MS-SIM	ST	226-57	49				
Anthracene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48	
Anthracene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-UV	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48	
Antimony & compounds (as Sb)	OSHA ID 121	0.5 mg/m³		960		2000		8		AA or AES	F/CST F/CST	225-508 225-3-01	or 100	F/CST C/HLD	225-802 225-1	or 114	

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞									
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time			
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Antimony & compounds (as Sb)	OSHA ID 125G	0.5 mg/m³		480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 or C/HLD 225-3100 100 C/HLD 225-1 114
Antimony (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	0.05 mg/m³		1-2000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Antimony (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	0.5 mg/m³		50-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Antimony (Elements by ICP HNO_3 Digestion)	NIOSH 7303	0.5 mg/m³		3-100,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 508 100 C/HLD 225-1 114
Antimony (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	0.5 mg/m³		50-2000		1000-4000		varies		ICP-AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 C/HLD 225-1 100 114
Antimony (ICP Analysis of Metal/metalloid Particulates from Solder Operations)	OSHA ID 206	0.5 mg/m³		480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-508 100 C/HLD 225-1 114
Apron	OSHA PV2102			60		1000		1		HPLC-UV	F/CST 225-709 108 C/HLD 225-1 114
Aroclor	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Aroclor	NIOSH 5602			480		1000		8		GC-ECD	ST 226-58 49
Aroclor 1242	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Aroclor 1242 (42% Cl) *(see polychlorobiphenyls)*	NIOSH 5503										
Aroclor 1254	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Aroclor 1254 (54% Cl) *(see polychlorobiphenyls)*	NIOSH 5503										
Aroclor 1260	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Aromatic hydrocarbons (screening)	NIOSH 2549	varies		1-6		10-50		varies		GC-MS	ST 226-330 52
Arsenic (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	0.002 mg/m³		32-2000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Arsenic & compounds (as As)	NIOSH 7900	2 µg/m³ (15 min)		30		2000		15		AA-F	F/CST 225-3-01 or F/CST 225-508 100 C/HLD 225-1 114
Arsenic (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	0.002 mg/m³		5-2000		1000-4000		varies		ICP-AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 C/HLD 225-1 100 114
Arsenic (Elements by ICP Hot Block/HCl/HNO_3 Digestion)	NIOSH 7303	0.002 mg/m³		8-5,000,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-508 100 C/HLD 225-1 114
Arsenic (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	0.002 mg/m³ (C)		5-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 508 or F/CST 225-802 C/HLD 225-1 100 114
Arsenic (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Arsenic (inorganic compounds as As)	OSHA 1006	0.01 mg/m³		480		2000		4		ICP-MS	F/CST 225-508 or F/CST 225-3-01 100 C/HLD 225-1 114
Arsenic trioxide as AS	NIOSH 7901	2 mg/m³ (15 min)		30		2000		15		AAS-GF	FLT 225-9001 68 CST 225-2LF 113 C/HLD 225-1 114
Arsenic, inorganic (volatile compounds as As)	OSHA 1006	0.01 mg/m³		480		2000		4		ICP-MS	F/CST 225-508 or F/CST 225-3-01 100 C/HLD 225-1 114
Arsenic, organo	NIOSH 5022			50-100		1000-3000		8		IC-AA	F/CST 225-1713 106 C/HLD 225-2LF 113 C/HLD 225-1 114
Arsine	NIOSH 6001	2 µg/m³ [c] (15 min)		0.1-10	3	20	200	8	15	AAS-GF	ST 226-01 48
Arylam *(see carbaryl)*											
Asbestos	OSHA ID 160	0.1 fbr/cc	1 fbr/cc EL	25-1200	25-1200	500-2500	500-2500	varies	varies	PCM	FLT/CL 225-321 or FLT/CL 225-326 or FLT/CL 225-321A or FLT/CL 225-327 102
Asbestos ([bulk] by PLM)	NIOSH 9002	1% (bulk)		bulk						PLM	
Asbestos (by TEM)	NIOSH 7402	0.1 fbr/cc/400L		960		2000		8		TEM	FLT/CL 225-327 102
Asbestos (chrysotile)	NIOSH 9000			bulk						XRD	
Asbestos (structure number concentrations)	ASTM D 5755			varies		2000		2 min (minimum)		TEM	MVC 225-322 171
Asbestos fibers	NIOSH 7400	0.1 fbr/cc/400L		varies		varies		varies		PCM	FLT/CL 225-321 or FLT/CL 225-326 or FLT/CL 225-321A or FLT/CL 225-327 102
Aspartame	NIOSH 5031			1-3		1000-3000		20 mins-7 hrs		HPLC-UV	FLT 225-1715 106 C/HLD 225-1 114
Asphalt fume (benzene-soluble & total particulate)	NIOSH 5042	5 mg/m³ (15 min) (C)		28-400	60	1000	4000	6	15	GR	FLT 225-1713 106 C/HLD 225-1 114
Asphalt fume particulate	ASTM D 6494			960		2000		8		GR	F/CST 225-1713 106 C/HLD 225-1 114
Asphalt fumes (petroleum)	OSHA 58			960		2000		8		GR & HPLC-FD, or GR & HPLC-UV	FLT 225-709 108 C/HLD 225-1 114

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞							
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time	
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)
Atrazine	ASTM D 4861			240-7200		1000-5000		4-24	
Atrazine	NIOSH 5602	5		12-480		200-1000		8	
Azelaic acid	NIOSH 5019			200-1000		1000-3000		8	
Azinphos-methyl	OSHA PV2087	0.2 mg/m³		480		1000		8	
Azinphos-methyl (Organophosphorus Pesticides)	NIOSH 5600	0.2 mg/m³		12-240		200-1000		4	
Bacteria	NIOSH 0800			varies		28,300		varies	
Bacteria (by GC-FAME)	NIOSH 0801			50-300		28300		varies	
Bacteria (in air)	NON 48			62.5-375		12,500 +		5-30	
Barium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306			3-2000		1000-4000		varies	
Barium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	0.5 mg/m³		50-2000		1000-4000		varies	
Barium (Elements by ICP HNO_3 Digestion)	NIOSH 7303			1-100,000		1000-4000		varies	
Barium (Elements on Wipes)	NIOSH 9102			wipe					
Barium (insoluble compounds)	OSHA ID 121			960		2000		8	
Barium (soluble compounds)	NIOSH 7056	0.5 mg/m³		960		2000		8	
Barium (soluble compounds)	OSHA ID 121	0.5 mg/m³		960		2000		8	
Barium chloride (barium, soluble compounds)	NIOSH 7056	0.5 mg/m³		960		2000		8	
Barium sulfate (total dust)	OSHA ID 121	15 mg/m³		960		2000		8	
Baygon (propoxur)	ASTM D 4861			240-7200		1000-5000		4-24	
Baygon (propoxur)	OSHA PV2007			48		100		8	
Bendiocarb	ASTM D 4861			240-7200		1000-5000		4-24	
Bendiocarb (Ficam)	OSHA PV2008			240		1000		4	
Benomyl (Organonitrogen Pesticides)	NIOSH 5601			240		1000		4	
Benomyl (respirable dust)	OSHA PV2107	5 mg/m³		varies		varies		varies	
Benomyl (total dust)	OSHA PV2107	15 mg/m³		60		1000		1	
Bentonite *(see Particulates Not Otherwise Regulated, total and respirable)*									
Benz(a)anthracene	OSHA In House File			960		2000			
Benz[a]anthracene (1,2-benzanthracene; 2,3-benzphenanthrene; tetraphene) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m³ (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs	
Benz(a)anthracene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m³ (max)		225 L/min		1-24	
Benz(a)anthracene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4	
Benz(a)anthracene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4	
Benzaldehyde	ASTM D 5197			varies		500-1200		5 min-24 hrs	
Benzene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1	
Benzene	Internal					16.0 ml/min		8-24 hrs	
Benzene	Internal					0.78 ml/min		24 hrs-7 days	
Benzene	Internal					16.0 ml/min		8 hrs-30 days	
Benzene	OSHA 1005	1	5					8	15
Benzene	OSHA 1005	1	5	12	0.75	50	50	4	15
Benzene	OSHA 1005	1	5	12	0.5	50	50	240 min	10

Analytical Method	SKC Collecting Equipment & Page Number
GC-NPD	PUF 226-92 54
GC-ECD	ST 226-58 49 TH 224-29V 37
GC-FID	F/CST 225-803 105 C/HLD 225-1 114
GC-FPD	ST 226-30-16 48 TH 224-29V 37
GC-FPD	ST 226-58 49
varies	BI 225-9611 134
GC-FID	BI 225-9611 134
varies	BS 225-9595 136 VT 225-9598A ◊ 136
ICP-AES	SC 225-8517 101 C/HLD 225-1 114
ICP-AES	F/CST 225-3-01 or 114 C/HLD 225-1 F/CST 225-803 ¥ 105
ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
ICP-AES	W 225-2414 170 TMP 225-2415 170
AA or AES	F/CST 225-508 or 100 F/CST 225-3-01 or F/CST 225-8408 C/HLD 225-1 114
AA	F/CST 225-3-01 100 C/HLD 225-1 114
AA or AES	F/CST 225-508 or 100 F/CST 225-3-01 or F/CST 225-8408 C/HLD 225-1 114
AA	F/CST 225-3-01 100 C/HLD 225-1 114
AA or AES	F/CST 225-508 or 100 F/CST 225-3-01 or F/CST 225-8408 C/HLD 225-1 114
HPLC-UV	PUF 226-92 54
HPLC-UV	ST 226-30-16 48 TH 224-29V 37
HPLC-UV	PUF 226-92 54
HPLC-UV	ST 226-30-16 48 TH 224-29V 37
HPLC-UV	F/CST 225-709 108 C/HLD 225-1 114
GC-MS-SIM	ST 226-57 49
GC-MS	PUF 226-131 55 FLT 225-1808 107
GC-FID	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
HPLC-FD	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
HPLC-UV	ST 226-120 ○ or ST 226-119 50
TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
TD, GC	PS 690-101 or PS 690-103 96
TD, GC	PS 690-101 or PS 690-103 with RR 690-300 96
SE, GC	PS 690-105 96
GC-FID	PS 575-002 82
GC-FID	ST 226-01 48
GC-FID	ST 226-01 48

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞																	
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time											
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number								
Benzene (by portable GC)	NIOSH 3700	0.1	1 (15 min)	varies		20-5000		varies		P GC-PID	SB	232 Series	61						
Benzene (Hydrocarbons, Aromatic)	NIOSH 1501	0.1	1	5-30	5-30	10-200	10-200	varies	varies	GC-FID	ST	226-01	48						
alpha-Benzene hexachloride	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54						
beta-Benzene hexachloride	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54						
gamma-Benzene hexachloride	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54						
Benzene-soluble & total particulate (asphalt fume)	NIOSH 5042		5 mg/m³ (15 min) (C)	360	60	1000	4000	6	15	GR	FLT CST	225-17-33 225-2LF	106 113	SP	225-27	115			
Benzene-soluble particulate matter	ASTM D 4600			960		2000		8		GR	FLT CST	225-7 225-2LF	108 113	SP C/HLD	225-27 225-1	115 114			
Benzidine	NIOSH 5509	LFC		96		200		8		HPLC-UV	FLT	225-16	108	CST	225-32	114			
Benzidine	OSHA 65			100		1000		100 min		GC-ECD	CF/CST	225-9004	68	C/HLD	225-1	114			
Benzidine dyes (dyes, benzidine)	NIOSH 5013	LFC		150 (@0.1mg/m³) -500		1000-3000	varies	8		HPLC	FLT C/HLD	225-17P 225-1	106 114	CST	225-3LF	113			
Benzidine-based dyes	OSHA 65			100	15	1000	1000	100 min		GC-ECD	CF/CST	225-9004	68	C/HLD	225-1	114			
Benzo[a]pyrene (3,4-benzopyrene; 6,7-benzopyrene) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m³ (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST	226-57	49						
Benzo(a)pyrene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515	0.1 mg/m³		480		2000		4		GC-FID	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Benzo(a)pyrene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m³ (max)		225 L/min		1-24		GC-MS	PUF PEM	226-131 761-200B	55 130	FLT FLT	225-1808 225-1709	107 106			
Benzo(a)pyrene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-FD	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Benzo[b]fluoranthene (3,4-benzfluoranthene; 2,3-benzofluoranthene; benz[e]acephenanthrylene) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m³ (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST	226-57	49						
Benzo(b)fluoranthene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m³ (max)		225 L/min		1-24		GC-MS	PUF PEM	226-131 761-203B	55 130	FLT FLT	225-1808 225-1709	107 106			
Benzo(b)fluoranthene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Benzo(b)fluoranthene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-FD	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Benzo(e)pyrene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Benzo(e)pyrene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m³ (max)		225 L/min		1-24		GC-MS	PUF	226-131	55	FLT	225-1808	107			
Benzo(e)pyrene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-FD	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Benzo[g,h,i] perylene (1,12-benzoperylene) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m³ (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST	226-57	49						
Benzo(g,h,i)perylene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m³ (max)		225 L/min		1-24		GC-MS	PUF	226-131	55	FLT	225-1808	107			
Benzo(g,h,i)perylene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Benzo(g,h,i)perylene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-FD	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Benzo[k]fluoranthene (benzofluoranthene; 2,3,1',8'-binaphthylene; dibenzo[bjk]fluorene) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m³ (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST	226-57	49						
Benzo(k)fluoranthene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Benzo(k)fluoranthene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-FD	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Benzoalphapyrene	OSHA 58	0.2 mg/m³		960		2000		8		GR & HPLC-FD, or GR & HPLC-UV	FLT C/HLD	225-7 225-1	108 114	CST	225-2LF	113			
Benzophenone	NON 39			480		1000		8		GC-FID	ST	226-56	49						
Benzophenone	OSHA PV2130	0.5 mg/m³		48		200		4		GC-FID	ST	226-110	50						
Benzothiazole in asphalt fume	NIOSH 2550			480		1000		8		GC-SCD	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Benzoyl peroxide	NIOSH 5009	5 mg/m³		90		1500		1		HPLC-UV	F/CST	225-3-01	100	C/HLD	225-1	114			

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞									
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time			
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Benzyl acetate	OSHA PV2124			10		100		100 min		GC-FID	ST 226-73 49
Benzyl alcohol	OSHA PV2009			24		100		4		GC-FID	ST 226-95 50
Benzyl chloride (hydrocarbons, halogenated)	NIOSH 1003		1		10		10-200		varies	GC-FID	ST 226-01 48
Beryllium & compounds	OSHA ID 125G	0.2 µg/m³	2.0 µg/m³	480	60	2000	2000	4	15	ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Beryllium & compounds (as Be)	NIOSH 7102		0. 5 µg/m³	960		2000		8		AA-GF	F/CST 225-3-01 100 C/HLD 225-1 114
Beryllium & compounds (as Be)	OSHA 1023	0.2 µg/m³	2.0 µg/m³	480	30	2000	2000	4	15	ICP-AES	FLT 225-5 100 CST 225-2LF 113 SM TB 225-24 170
Beryllium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	0.0005 mg/m³	0.005 mg/m³	10-2000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Beryllium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	0.0005 mg/m³		1250-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 105 C/HLD 225-1 114
Beryllium (Elements by ICP HNO_3 Digestion)	NIOSH 7303			35-25,000,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Beryllium (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	0.0005 mg/m³		1250-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Beryllium (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Beryllium (ICP analysis of metal/metalloid particulates from solder operations)	OSHA ID 206	0.2 µg/m³	2.0 µg/m³	480	10	2000	2000	4	5	ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Beryllium (in air by portable fluorometry)	NIOSH 7704	2 mg/m³	5 mg/m³ (C)	240-2000		1000-4000				P FLUOR UV/VIS	F/CST 225-3-01 or F/CST 225-3100 100 C/HLD 225-1 114
BHC (alpha-, beta-, gamma-)	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Bioaerosol sampling	NIOSH 0800			varies		28,300		varies		varies	BI 225-9611 134
Bioaerosols				15-150		15000		1-10 min		varies	STC 225-9820 112
Bioaerosols	NON 48			62.5-375		12,500 +		5-30		varies	BS 225-9595 136 VT 225-9598A 136
Biphenyl (diphenyl)	NIOSH 2530	0.2		10		20(50)		8(3.3)		GC-FID	ST 226-35-01 48
4,4'-Bipyridine (vapor & aerosol)	NON 26			96	2	200	200	8	10	HPLC	ST 226-30-05 48 F/CST 225-706 108 C/HLD 225-1 114
Bismuth	OSHA ID 121			480-960		2000		4-8		AAS/AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Bismuth (Elements by ICP HNO_3 Digestion)	NIOSH 7303			1-10,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Bismuth telluride, Se-doped	OSHA ID 121	5 mg/m³		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Bismuth telluride, undoped (respirable dust)	OSHA ID 121	5 mg/m³		varies		varies		varies		GR & AA or GR & AES	CYC 225-105 124 C/HLD 225-1 114 F/CST 225-803 105
Bisphenol A	OSHA 1018			240		1000		240 (min)		HPLC-UV/PDA	F/CST 225-709 108 C/HLD 225-1 114
Borates tetrasodium salts (anhydrous, decahydrate & pentahydrate)	OSHA ID 125G			480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Boron (Elements by ICP HNO_3 Digestion)	NIOSH 7303			1-3,300		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Boron carbide	NIOSH 7506			600		2500		4		XRD	F/CST 225-803 105 C/HLD 225-1 114 CYC 225-01-02 125
Boron oxide (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Boron oxide (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Bromine	NIOSH 6011	0.1	0.3	240	15	1000	1000	4	15	IC	CF/CST 225-9006 68 C/HLD 225-1 114
Bromine	OSHA ID 108	0.1		120	7.5	500	500	4	15	IC	IMP 225-36-2 70 IT 225-22 70
Bromoethane (ethyl bromide)	NIOSH 1011			4		20(50)		3.3(1.3)		GC-FID	ST 226-01 48
Bromoform (hydrocarbons, halogenated)	NIOSH 1003	0.5 (skin)		10		10-200		varies		GC-FID	ST 226-01 48
1-Bromopropane	Internal					14.4 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
1-Bromopropane	Internal					14.4 ml/min		8-24 hrs		SE, GC	PS 690-105 96
1-Bromopropane	NIOSH 1025			0.1-12		10-200		varies		GC-FID	ST 226-01 48
1-Bromopropane	OSHA 1017			12		50		240 (min)		GC-FID	ST 226-01 48
1-Bromopropane	OSHA PV2061			12		100		2		GC-FID	ST 226-01 48

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞																	
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time											
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number								
2-Bromopropane	NIOSH 1025			0.1-12		10-200		varies		GC-FID	ST	226-01	48						
2-Bromopropane	OSHA 1017			12		50		240 (min)		GC-FID	ST	226-01	48						
2-Bromopropane	OSHA PV2062			12		100		2		GC-FID	ST	226-01	48						
Bromotrifluoromethane (trifluorobromomethane)	NIOSH 1017	1000		0.1(@1000ppm)-1L		10-50		2-100 min		GC-FID	ST	226-09	48	ST	226-01	48			
Bromoxynil	NIOSH 5010			240		1000		4		HPLC-UV	F/CST	225-1713	106	C/HLD	225-1	114			
Bromoxynil octanoate	NIOSH 5010			240		1000		4		HPLC-UV	F/CST	225-1713	106	C/HLD	225-1	114			
BTEX (hydrocarbons, aromatic. *See benzene, toluene, ethylbenzene, and xylene*)	NIOSH 1501	varies		varies		varies		varies		GC-FID	ST	226-01	48						
1,3-Butadiene	NIOSH 1024	LFC		10		20		8		GC-FID	ST	226-37	49						
1,3-Butadiene	NON 62	1	5			14.9 ml/min		See method		TD, GC/FID	PS	690-106	96						
1,3-Butadiene	OSHA 56	1	5	3		50		1		GC-FID	ST	226-73	49						
Butane	OSHA PV2010			3		50		1		GC-FID	ST	NA SKC							
1-Butanethiol (butyl mercaptan)	NIOSH 2525		0.5	1		50		15		GC-FPD	ST	226-109	50						
n-Butanol (alcohols combined)	NIOSH 1405	50 (skin)		2-10		10-200		varies		GC-FID	ST	226-01	48						
2-Butanone	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
2-Butanone	Internal					16.9 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-103	96			
2-Butanone	Internal					16.9 ml/min		8-24 hrs		SE, GC	PS	690-105	96						
2-Butanone	OSHA 1004	200		12		50		4		GC-FID	ST	575-002	82						
2-Butanone (methyl ethyl ketone)	NIOSH 2500	200	300	10	3	20(50)	200	8(3.3)	15	GC-FID	ST	226-81A	49						
2-Butanone (methyl ethyl ketone)	OSHA 1004	200				16.88		8		GC-FID	PS	575-002	82						
2-Butoxyethanol (alcohols IV)	NIOSH 1403	5 (skin)		2-10		10-50		varies		GC-FID	ST	226-01	48						
2-Butoxyethanol (butyl CELLOSOLVE solvent)	OSHA 83	50		48		100		8		GC-FID	ST	226-01	48						
2-Butoxyethanol acetate	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
2-Butoxyethanol acetate (butyl CELLOSOLVE acetate)	OSHA 83			48		100		8		GC-FID	ST	226-01	48						
n-Butyl acetate	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
n-Butyl acetate	Internal					12.3 ml/min		8-24 hrs		TD, GC	PS PS	690-101 690-104	or 96	PS	690-103	or			
n-Butyl acetate	Internal					12.3 ml/min		8-24 hrs		SE, GC	PS	690-105	96						
n-Butyl acetate	OSHA 1009	150				13.07	13.07	8	15	GC-FID	PS	575-002	82						
n-Butyl acetate	OSHA 1009	150		12	0.75	50	50	4	15	GC-FID	ST	226-01	48						
sec-Butyl acetate	OSHA 1009	200				12.74	12.74	8	15	GC-FID	PS	575-002	82						
sec-Butyl acetate	OSHA 1009	200		12	0.75	50	50	4	15	GC-FID	ST	226-01	48						
t-Butyl acetate	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
t-Butyl acetate	OSHA 1009	200				13.09	13.09	8	15	GC-FID	PS	575-002	82						
t-Butyl acetate	OSHA 1009	200		12	0.75	50	50	4	15	GC-FID	ST	226-01	48						
n-Butyl acetate (Esters I)	NIOSH 1450	150	200	1-10	1-10	10-200	10-200	varies	varies	GC-FID	ST	226-01	48						
sec-Butyl acetate (Esters I)	NIOSH 1450	200		1-10		10-200		varies		GC-FID	ST	226-01	48						
t-Butyl acetate (Esters I)	NIOSH 1450	200		1-10		10-200		varies		GC-FID	ST	226-01	48						
Butyl acrylate	Internal					11.7 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-103	96			
Butyl acrylate	Internal					11.7 ml/min		8-24 hrs		SE, GC	PS	690-105	96						
Butyl acrylate	OSHA PV2011			12		50		4		GC-FID	ST	226-73	49						
n-Butyl acrylate	NON 54	5	15	10	3	20	200	8	15	GC-FID	ST	226-81A	49						
n-Butyl alcohol	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
n-Butyl alcohol	OSHA 5001	200		12		4				GC-FID	ST	226-82	50						
sec-Butyl alcohol	OSHA 5001	200		12		4				GC-FID	ST	226-82	50						
n-Butyl alcohol (alcohols combined)	NIOSH 1405	50 (skin)		2-10		10-200		varies		GC-FID	ST	226-01	48						
sec-Butyl alcohol (alcohols combined)	NIOSH 1405	100	150	2-10	2-10	10-200	10-200	varies	varies	GC-FID	ST	226-01	48						

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Abbreviations and references are found on pages 244-245.

		SAMPLING ∞									
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time			
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
t-Butyl alcohol (Alcohols I)	NIOSH 1400	100	150	10		20(50)		8(3.3)		GC-FID	ST 226-01 48
n-Butyl alcohol (alcohols II)	NIOSH 1401		50	10	3	20(50)	200	8(3.3)	15	GC-FID	ST 226-01 48
sec-Butyl alcohol (alcohols II)	NIOSH 1401	100	150	10	3	20(50)	200	8(3.3)	15	GC-FID	ST 226-01 48
n-Butyl amine			5			18		8 hrs		HPLC-UV	PS 500-400 92
Butyl butryrate	OSHA PV2090			10		200		50 min		GC-FID	ST 226-01 48
Butyl carbitol (diethylene glycol monobutyl ether)	OSHA PV2095			10		200		50 min		GC-FID	ST 226-01 48
Butyl carbitol acetate	OSHA PV2095			10		200		50 min		GC-FID	ST 226-01 48
Butyl CELLOSOLVE acetate *(see 2-butoxyethanol acetate)*	OSHA 83										
Butyl CELLOSOLVE solvent *(see 2-butoxyethanol)*	OSHA 83										
t-Butyl chromate (as CrO_3)	OSHA ID 215 (V2)	0.005 mg/m³		960		2000			15	IC-UV	F/CST 225-802 105 C/HLD 225-1 114
t-Butyl ethyl ether (ethyl tert-butyl ether)	Internal					13.1 ml/min		8-24 hrs		TD, GC	PS 690-101 or 96 PS 690-104 PS 690-103 96
t-Butyl ethyl ether (ethyl tert-butyl ether)	Internal					13.1 ml/min		8-24 hrs		SE, GC	PS 690-105 96
n-Butyl glycidyl ether	NIOSH 1616		5.6 (15 min)		3		200		15	GC-FID	ST 226-01 48
n-Butyl lactate	OSHA PV2080			10		200		50 min		GC-FID	ST 226-01 48
n-Butyl mercaptan	NIOSH 2525		0.5		1		50		15	GC-FPD	ST 226-109 50
n-Butyl mercaptan (mercaptans)	NIOSH 2542		0.5 (15 min)	48	12	100	200	8	60	GC-FPD	CF/CST 225-9007 68 C/HLD 225-1 114
t-Butyl methyl ether (MTBE)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
t-Butyl methyl ether (MTBE)	Internal					13.6 ml/min		8 hrs-30 days		SE, GC	PS 690-105 96
Butyl ziram	OSHA PV2065			180		1000		3		HPLC-UV	ST 226-30-16 48 TH 224-29V 37
n-Butylamine	NIOSH 2012		5		15		1000		15	GC-FID	ST 226-53 49
Butylated hydroxytoluene	OSHA PV2108			100		1000		100 min		GC-FID	ST 226-57 49
1,3-Butylene glycol (glycols)	NIOSH 5523			5-60		500-2000		varies		GC-FID	ST 226-57 49
o-sec-Butylphenol	OSHA PV2128			20		200		1.6		HPLC-UV	ST 226-95 50
p-tert-Butylphenol	OSHA PV2085			20		200		100 min		GC-FID	ST 226-95 50
Butyltin trichloride	OSHA ID 217SG			240		1000		4		AA-GF	ST 226-30-16 48
p-tert-Butyltoluene	Internal					10.4 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
p-tert-Butyltoluene	Internal					10.4 ml/min		8-24 hrs		SE, GC	PS 690-105 96
p-tert-Butyltoluene (Hydrocarbons, Aromatic)	NIOSH 1501	10	20	1-29	1-29	10-200	10-200	varies	varies	GC-FID	ST 226-01 48
Butyraldehyde	ASTM D 5197			varies		500-1200		5 min-24 hrs		HPLC-UV	ST 226-120 ○ or ST 226-119 50
Butyraldehyde (Aldehydes, Screening)	NIOSH 2539			5		20		4		GC-FID & GC-MS	ST 226-118 50
Cadmium & compounds (as Cd)	NIOSH 7048	LFC		480	30	1000	2000	8	15	AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Cadmium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	LFC		3-2000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Cadmium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	LFC		13-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or 114 C/HLD 225-1 F/CST 225-803 ¥ 105
Cadmium (Elements by ICP HNO_3 Digestion)	NIOSH 7303			3-500,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Cadmium (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	LFC		13-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or 114 C/HLD 225-1 F/CST 225-8408 100
Cadmium (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Cadmium dust (as Cd)	OSHA ID 121	0.2 mg/m³	0.5 mg/m³	960	30	2000	2000	8	15	AA	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Cadmium	OSHA 1006	0.2 mg/m³	0.5 mg/m³	480		2000		4		ICP-MS	F/CST 225-3-01 100 C/HLD 225-1 114
Cadmium	OSHA 5003	0.2 mg/m³	0.5 mg/m³	480		2000		4		ICP-MS	F/CST 225-3-01 100 C/HLD 225-1 114
Cadmium	OSHA ID125G	0.1 mg/m³ (fume) 0.2 mg/m³ (dust)	0.3 mg/m³ (fume) 0.6 mg/m³ (dust)	480	30	2000	2000	4	15	ICP	F/CST 225-3-01 100 C/HLD 225-1 114
Cadmium dust (as Cd)	OSHA ID 206	0.2 mg/m³	0.5 mg/m³	960	30	2000	2000	8	15	ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Cadmium fume (ICP analysis of metal/metalloid particulates from solder operations)	OSHA ID 206	0.1 mg/m³	0.3 mg/m³ (C)	480		2000		4		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Calcium & compounds (as Ca)	NIOSH 7020	varies		240		1000		4		AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Calcium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306			Varies		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Calcium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	varies		5-200		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Calcium (Elements by ICP HNO_3 Digestion)	NIOSH 7303			2-10,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Calcium (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	varies		5-200		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Calcium *(see specific compounds)*	NIOSH 7020	varies		varies		varies		varies		AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Calcium carbonate	OSHA ID 121	15 mg/m³		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Calcium carbonate (calcium)	NIOSH 7020	2 mg/m³		240		1000		4		AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Calcium carbonate (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Calcium carbonate (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Calcium carbonate *(see Particulates Not Otherwise Regulated, total and respirable)*											
Calcium cyanamide	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Calcium hydroxide	OSHA ID 121	5 mg/m³		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Calcium hydroxide (calcium)	NIOSH 7020	2 mg/m³		240		1000		4		AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Calcium hydroxide *(see Particulates Not Otherwise Regulated, total and respirable)*											
Calcium oxide	OSHA ID 121	5 mg/m³		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Calcium oxide (calcium)	NIOSH 7020	2 mg/m³		240		1000		4		AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Calcium oxide (Elements by ICP HNO_3 Digestion)	NIOSH 7303	2 mg/m³		3-10,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Calcium silicate (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Calcium silicate (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Calcium sulfate (Particulates Not Otherwise Regulated, total and respirable)											
Camphor (Ketones II)	NIOSH 2553	2		1-25		10-200		varies		GC-FID	ST NA SKC
Camphor (Ketones II)	NIOSH 1301	2		10		20(50)		8(3.3)		GC-FID	ST 226-01 48
Caprolactam (dust and vapor)	OSHA PV2012	5 mg/m³		100		1000		100 min		HPLC-UV	ST 226-57 49 TH 224-29V 37
Capsaicin	NIOSH 5041			480	15	1000	1000	8	15	HPLC-FD	FLT 225-16 108 CST 225-32 114
Captan	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Captan	OSHA PV2093			60		1000		1		HPLC-UV	ST 226-30-16 48 TH 224-29V 37
Captan (Organonitrogen Pesticides)	NIOSH 5601	5 mg/m³		240		1000		4		HPLC-UV	ST 226-58 or ST 226-30-16 48 TH 224-29V 37
Carbaryl	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF 226-92 54
Carbaryl (Organonitrogen Pesticides)	NIOSH 5601	5 mg/m³		240		1000		4		HPLC-UV	ST 226-58 or ST 226-30-16 48 TH 224-29V 37
Carbaryl (Sevin)	NIOSH 5006	5 mg/m³		240		1000		4		VAS	F/CST 225-706 108 C/HLD 225-1 114
Carbaryl (Sevin)	OSHA 63	5 mg/m³		60		1000		1		HPLC-UV	ST 226-30-16 48 TH 224-29V 37
Carbendazim (Organonitrogen Pesticides)	NIOSH 5601			240		1000		4		HPLC-UV	ST 226-58 or ST 226-30-16 48 TH 224-29V 37
Carbitol	OSHA PV2013			10		200		50 min		GC-FID	ST 226-01 48
Carbitol acetate	OSHA PV2013			10		200		50 min		GC-FID	ST 226-01 48
Carbofuran	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF 226-92 54
Carbofuran (Organonitrogen Pesticides)	NIOSH 5601	0.1 mg/m³		240		1000		4		HPLC-UV	ST 226-58 or ST 226-30-16 48 TH 224-29V 37

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞									
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time			
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Carbon black	NIOSH 5000	3.5 mg/m³		360		1500		4		GR	FLT 225-5-37-P 105 CST 225-3LF 113 SCN 225-26 115 C/HLD 225-1 114
Carbon black	OSHA ID 196	3.5 mg/m³		960		2000		8		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Carbon dioxide	OSHA ID 172	5000	30000	2-5	2-5	10-50	300	4-8	15	GC-TCD	SB 253 Series or SB 263 Series 62
Carbon dioxide (by portable GC)	NIOSH 6603	5000	30000	varies	varies	20-100	20-100	varies	varies	P GC-TCD	SB 232 Series 61
Carbon disulfide	NIOSH 1600	1	10	10	3	20(50)	200	8(3.3)	15	GC-FPD	ST 226-01 48 DRT 226-44 49
Carbon monoxide	OSHA ID 210	50		2-5	2-5	10-50	1000	varies	varies	GC-DID	SB 252 Series or SB 253 Series or SB 262 Series or SB 263 Series 62
Carbon tetrachloride	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Carbon tetrachloride	Internal					0.59 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 with RR 690-300 96
Carbon tetrachloride	Internal					14.1 ml/min		8 hrs-7 days		SE, GC	PS 690-105 96
Carbon tetrachloride (hydrocarbons, halogenated)	NIOSH 1003		2 (1 hrs)		15		10-200		varies	GC-FID	ST 226-01 48
Carbon, activated (Particulates Not Otherwise Regulated, total)											
3-Carene (terpenes)	NIOSH 1552			24		50		8		GC-FID	ST 226-01 48
Catechol (pyrocatechol)	OSHA PV2014			100		1000		100 min		HPLC-UV	ST 226-57 49
Cell fragments (bioaerosols)					15-150		15000		1-10 min	varies	STC 225-9820 112
CELLOSOLVE acetate *(see 2-ethoxyethyl acetate)*											
CELLOSOLVE solvent *(see 2-ethoxyethanol)* (alcohols IV)	NIOSH 1403										
Cellulose (paper fiber) (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Cellulose (paper fiber) (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Cellulose *(see Particulates Not Otherwise Regulated, total and respirable)*											
Cellulose insulation	NIOSH 7404			varies		1000		varies		SEM	FLT/CL 225-1604 109
Cerium	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Chlordane	NIOSH 5510	0.5 mg/m³		150		1000		2.5		GC-ECD	ST 226-107 50 FLT 225-5 100 CST 225-2LF 113 SCN 225-26 115 C/HLD 225-1 114
Chlordane	OSHA 67	0.5 mg/m³		480		1000		8		GC-ECD	ST 226-30-16 48 TH 224-29V 37
Chlordane (non-occupational exposure)	ASTM D 4947			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Chlordane (technical)	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Chlorinated & organonitrogen herbicides	NIOSH 5602			480		1000		8		GC-ECD	ST 226-58 49
Chlorinated & organonitrogen herbicides (hand wash)	NIOSH 9200									GC-ECD	NA SKC
Chlorinated camphene (toxaphene)	NIOSH 5039	LFC		30	15	1000	1000	0.5	15	GC-ECD	F/CST 225-3-01 100 C/HLD 225-1 114
Chlorinated diphenyl ether (chlorinated diphenyl oxide)	NIOSH 5025	0.5 mg/m³		180		1000		3		GC-ECD	F/CST 225-3-01 100 C/HLD 225-1 114
Chlorinated diphenyl oxide	NIOSH 5025	0.5 mg/m³		90		1000		1.5		GC-ECD	F/CST 225-3-01 100 C/HLD 225-1 114
Chlorinated hydrocarbons (screening)	NIOSH 2549			1-6		10-50		varies		TD, GC-MS	ST 226-330 52
Chlorinated terphenyl (60% chlorine)	NIOSH 5014			720		1500		8		GC-ECD	F/CST 225-706 108 C/HLD 225-1 114
Chlorine	NIOSH 6011	0.5	1	90	15	1000	1000	1.5	15	IC	CF/CST 225-9006 68 C/HLD 225-1 114
Chlorine	OSHA ID 101		1 (C)	240	15	1000	1000	4	15	ISE	IMP 225-36-2 70 IT 225-22 70
Chlorine (prefiltered)	OSHA ID 101		1 (C)	240	15	1000	1000	4	15	ISE	IMP 225-36-2 70 IT 225-22 70 CST 225-3-23 113 SP 225-2901 115 FLT 225-17-21 106
Chlorine dioxide	OSHA ID 202	0.1		120	7.5	500	500	4	15	IC-CD	IMP 225-36-2 70 IT 225-22 70
1-Chloro-1-nitropropane	NIOSH S211	20		12		200				GC-FID	ST NA SKC
5-Chloro-2-methyl-4-isothiazolin-3-one (Kathon 886)	NON 55	0.75 mg/m³	0.23 mg/m³	50	7.5	200	500	4	15	HPLC-UV	ST 226-99 50
1-Chloro-4-(trifluoromethyl)benzene	NIOSH 1026			0.1-10.0		10-200		8		GC-FID	ST 226-01 48

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Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Chloroacetaldehyde	NIOSH 2015	1		3		200		15		GC-ECD	ST 226-15GWS 48
Chloroacetaldehyde	OSHA 76	1 (C)		2.5		500		5		GC-ECD	ST 226-15GWS 48
Chloroacetic acid	NIOSH 2008			48		100		8		IC-CD	ST 226-47-01 49
p-Chloroaniline	OSHA PV2109			6		100		1		HPLC-UV	ST 226-10 48
Chlorobenzene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Chlorobenzene	Internal					14.4 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-104 96
Chlorobenzene	Internal					14.4 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Chlorobenzene (monochlorobenzene) (hydrocarbons, halogenated)	NIOSH 1003			10		10-200		varies		GC-FID	ST 226-01 48
4-Chlorobenzotrifluoride	NIOSH 1026			0.1-10.0		10-200		varies		GC-FID	ST 226-01 48
p-Chlorobenzotrifluoride	NIOSH 1026			0.1-10.0		10-200		varies		GC-FID	ST 226-01 48
Chlorobiphenyl	NIOSH 5503	0.001 mg/m³ (10 hrs)		48		100(200)		8(4)		GC-ECD	FLT 225-16 108 CST 225-32 114 ST 226-39 49
Chlorobromomethane (hydrocarbons, halogenated)	NIOSH 1003	200		60		10-200		8		GC-FID	ST 226-01 48
Chlorodiphenyl (42% Cl)	OSHA PV2089	1		60		1000		1		GC-ECD	ST 226-30-16 48 TH 224-29V 37
Chlorodiphenyl (42% Cl) *(see polychlorinated biphenyls)*	NIOSH 5503										
Chlorodiphenyl (54% Cl)	OSHA PV2088	0.5		60		1000		1		GC-ECD	ST 226-30-16 48 TH 224-29V 37
Chlorodiphenyl (54% Cl) *(see polychlorinated biphenyls)*	NIOSH 5503										
Chloroethane (ethyl chloride)	NIOSH 2519			3		50		1		GC-FID	ST 226-09 48
2-Chloroethanol (ethylene chlorohydrin)	NIOSH 2513	1		10		20(50)		8(3.3)		GC-FID	ST 226-81A 49
Chloroform	Internal					13.0 ml/min		8 hrs-7 days		SE, GC	PS 690-105 96
Chloroform (trichloromethane)	OSHA 05	50 (C)		10		200		50 min		GC-FID	ST 226-01 48
Chloroform (trichloromethane) (hydrocarbons, halogenated)	NIOSH 1003	2		15		10-200		varies		GC-FID	ST 226-01 48
bis-Chloromethyl ether	OSHA 10			50		500		100 min		GC-ECD	IMP 225-36-2 70 IT 225-22 70
Chloromethyl methyl ether	NON 29			2.4	0.3	10	20	4	15	GC-ECD	ST NA SKC
Chloromethyl methyl ether	OSHA 10			50		500		100 min		GC-ECD	IMP 225-36-2 70 IT 225-22 70
4-Chloronitrobenzene (nitrobenzenes)	NIOSH 2005	0.1 ppm		96		200		8		GC-FID	ST 226-10 48
p-Chlorophenol	NIOSH 2014			24		50		8		HPLC-UV	ST 226-10 48
Chloropicrin	NON 51	0.1		144		100		24		GC-MSD	ST 226-175 51
Chloropicrin	OSHA PV2103	0.1		3		200		15 min		GC-ECD	ST 226-93 50
beta-Chloroprene	NIOSH 1002	1 (15 min)		1.5		100		15		GC-FID	ST 226-01 48
beta-Chloroprene	OSHA 112	25		6		50		2		GC-ECD	ST 226-111A 50
Chlorothalonil	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Chlorotoluron	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF 226-92 54
Chlorpropham (Organonitrogen Pesticides)	NIOSH 5601			240		1000		4		HPLC-UV	ST 226-58 or ST 226-30-16 48 TH 224-29V 37
Chlorpyrifos (Dursban)	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Chlorpyrifos (Dursban)	OSHA 62			480		1000		8		GC-FPD	ST 226-30-16 48
Chlorpyrifos (Organophosphorus Pesticides)	NIOSH 5600	0.2 mg/m³		240		1000		4		GC-FPD	ST 226-58 49
Chromic acid & chromates (as CrO_3)	OSHA ID 215 (V2)	0.005 mg/m³		960		2000		8	15	IC-UV	F/CST 225-802 Ω 105 C/HLD 225-1 114
Chromic acid & chromates (chromium hexavalent)	NIOSH 7600	1 µg/m³ (10 hrs)		240		1000		4		VAS	F/CST 225-803 105 C/HLD 225-1 114
Chromic acid & chromates (chromium hexavalent)	NIOSH 7604	1 µg/m³ (10 hrs)		960		2000		8		IC-CD	F/CST 225-803 105 C/HLD 225-1 114
Chromium & compounds (as Cr)	NIOSH 7024	0.5 mg/m³		10 - 1000		1000-3000		varies		AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Chromium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	0.5 mg/m³		1-2000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Chromium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	0.5 mg/m³		5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Chromium (Elements by ICP HNO_3 Digestion)	NIOSH 7303	0.5 mg/m³		8-500,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Chromium (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	0.5 mg/m³		5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Chromium (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Chromium acetate	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Chromium carbonate	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Chromium metal & insoluble compounds	OSHA ID 121	1 mg/m³		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Chromium metal & insoluble compounds	OSHA ID 125G	1 mg/m³		480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Chromium phosphate	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Chromium soluble salts (except hexavalent)	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Chromium trioxide (CR(VI))	OSHA ID 215 (V2)	0.005 mg/m³		960		2000		8		IC-UV	F/CST 225-802 105 C/HLD 225-1 114
Chromium, hexavalent	ASTM D 6832			varies		1000-5000		varies		IC	F/CST 225-802 or F/CST 225-1713 or F/CST 225-709 or F/CST 225-401 107
Chromium, hexavalent	NIOSH 7600	1 µg/m³ (10 hrs)		240		1000		4		VAS	F/CST 225-802 105 C/HLD 225-1 114
Chromium, hexavalent	NIOSH 7604	1 µg/m³ (10 hrs)		240		1000		4		IC-CD	F/CST 225-802 105 C/HLD 225-1 114
Chromium, hexavalent	NIOSH 7605	0.001 mg/m³ (10 hrs)		1-400		1000-4000		varies		IC-PCD-UV	F/CST 225-802 105 C/HLD 225-1 114
Chromium, hexavalent	NIOSH 7703	0.001 mg/m³ (10 hrs)		10-1200		1000-4000		varies		P VAS	F/CST 225-802 105 C/HLD 225-1 114
Chromium, hexavalent	OSHA W4001	0.005 mg/m³ (C)								IC-UV	FLT 225-5-37 or FLT 225-1822 107
Chromium, hexavalent (CR(VI))	OSHA ID 215 (V2)	0.005 mg/m³		960		2000		8		IC-UV	F/CST 225-802 Ω 105 C/HLD 225-1 114
Chromium, hexavalent (in settled dust)	NIOSH 9101			bulk	bulk					CLR or VAS or IC	
Chrysene	OSHA 58	0.2 mg/m³		960		2000		8		GR & HPLC-FD, or GR & HPLC-UV	FLT 225-7 108 CST 225-2LF 113 C/HLD 225-1 114
Chrysene (1.2-benzophenanthrene; benzo[a] phenanthrene) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m³ (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST 226-57 49
Chrysene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m³ (max)		225 L/min		1-24		GC-MS	PUF 226-131 55 FLT 225-1808 107
Chrysene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515	LFC		480		2000		4		GC-FID	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
Chrysene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506	LFC		480		2000		4		HPLC-UV	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
Chrysotile *(see asbestos fibers)*	NIOSH 9000			bulk						XRD	
Chrysotile fibers *(see asbestos fibers)*	NIOSH 7400										
Coal dust (> 5% SiO_2) *(see silica, respirable crystalline)*	OSHA ID 142 (v4)										
Coal tar naphtha (naphthas)	NIOSH 1550	100		3		20		2.5		GC-FID	ST 226-01 48
Coal tar pitch volatiles	OSHA 58	0.2 mg/m³		960		2000		8		GR & HPLC-FD, or GR & HPLC-UV	FLT 225-7 108 CST 225-2LF 113 C/HLD 225-1 114
Cobalt	OSHA ID 213	0.1 mg/m³		480		2000		6		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Cobalt & compounds (as Co)	NIOSH 7027	0.05 mg/m³		960		2000		8		AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Cobalt (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	0.05 mg/m³ (dust, fume)		1-2000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Cobalt (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	0.5 mg/m³ (dust, fume)		25-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Cobalt (Elements by ICP HNO_3 Digestion)	NIOSH 7303	0.5 mg/m³ (dust, fume)		3-500,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Cobalt (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	0.05 mg/m³ (dust, fume)		25-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Cobalt (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Cobalt acetate	OSHA ID 125G			480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Cobalt carbonyl	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Cobalt hydrocarbonyl	OSHA ID 121	0.1 mg/m³ (as Co)		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Cobalt metal, dust & fume	OSHA ID 125G	0.1 mg/m³		480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Cobalt metal, dust & fume (as Co)	OSHA ID 121	0.1 mg/m³		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Coke oven emissions	OSHA 58	0.15 mg/m³		960		2000		8		GR & HPLC-FD, or GR & HPLC-UV	FLT 225-7 108 CST 225-2LF 113 C/HLD 225-1 114
Command (dimethazone)	OSHA PV2066			60		1000		1		GC-ECD	ST 226-30-16 48 TH 224-29V 37
Copper (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	1 mg/m³ (dust) 0.1 mg/m³ (fume)		5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Copper (Elements by ICP HNO_3 Digestion)	NIOSH 7303	1 mg/m³ (dust) 0.1 mg/m³ (fume)		15-500,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Copper (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	1 mg/m³ (dust) 0.1 mg/m³ (fume)		5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Copper (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Copper dust	NIOSH 7029	1 mg/m³		480		1000		8		AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Copper dusts & mists	OSHA ID 125G	1 mg/m³		480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Copper dusts & mists (as Cu)	OSHA ID 121	1 mg/m³		960		2000		8		AA or AES	F/CST 225-3-01 100 C/HLD 225-1 114
Copper fume	NIOSH 7029	0.1 mg/m³		480		1000		8		AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Copper fume	OSHA ID 121	0.1 mg/m³		960		2000		8		AA or AES	F/CST 225-3-01 100 C/HLD 225-1 114
Copper fume	OSHA ID 125G	0.1 mg/m³		480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Copper fume (ICP analysis of metal/metalloid particulates from solder operations)	OSHA ID 206	0.1 mg/m³		480		2000		4		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Co-Ral (coumaphos)	OSHA PV2134			480		1000		8		GC-FPD	ST 226-30-16 48 TH 224-29V 37
Corn starch (Particulates Not Otherwise Regulated, respirable)											
Corundum (Al_2O_3) *(see alpha-alumina [total dust])*											
Corundum (emery) (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Corundum (emery) (particulates, total)	NIOSH 0500			120		2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
di-tert-butyl-p-Cresol	OSHA PV2108			100		1000		100 min		GC-FID	ST 226-57 49
Cresol (all isomers)	NIOSH 2546	10 mg/m³		24		100		4		GC-FID	ST 226-95 50
Cresol (all isomers)	OSHA 32	5		24		100		4		HPLC-UV	ST 226-95 50

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞															
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time									
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number						
Cresols	EPA TO-8			< 80 L		100-1000 ml/min				HPLC-UV	IMP	225-36-1	70	IT	225-22	70
Cristobalite *(see silica, respirable crystalline)*	OSHA ID 142 (v4)																
Cristobalite (silica, crystalline [respirable] by XRD)	NIOSH 7500	0.05 mg/m³		400-1000		2500		varies		XRD	F/CST C/HLD	225-803 225-1	105 114	CYC	225-01-02	125
Cristobalite (silica, crystalline by IR)	NIOSH 7602	0.05 mg/m³		1000		2000-4000		varies		IR	F/CST CYC	225-803 225-01-02	105 125	C/HLD	225-1	114
Crocidolite fibers *(see asbestos fibers)*	NIOSH 7400																
Crotonaldehyde	ASTM D 5197			varies		500-1200		5 min-24 hrs		HPLC-UV	ST	226-120	or	ST	226-119	50
Crotonaldehyde	NIOSH 3516	2		48		200		4		DPP	IMP	225-36-2	70	IT	225-22	70
Crotonaldehyde	OSHA 81	2		6		100		1		HPLC-UV	CF/CST	225-9019	68	C/HLD	225-1	114
Crotonaldehyde (Aldehydes, Screening)	NIOSH 2539	2		5		20		4		GC-FID & GC-MS	ST	226-118	50			
Crufomate	OSHA PV2015			60		1000		1		GC-FPD	ST	226-30-16	48	TH	224-29V	37
Cryolite (fluorides)	NIOSH 7902	2.5 mg/m³		480		1000		8		ISE	CF/CST	225-9001	68	C/HLD	225-1	114
Cumene (isopropyl benzene)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37
Cumene (isopropyl benzene)	Internal					12.8 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-104	96
Cumene (isopropyl benzene)	Internal					12.8 ml/min		8-24 hrs		SE, GC	PS	690-105	96			
Cumene (isopropyl benzene)	OSHA PV2137	50		24		200		2		GC-FID	ST	226-01	48			
Cumene (isopropyl benzene) (Hydrocarbons, Aromatic)	NIOSH 1501	50 (skin)		1-30		10-200		8(3.3)		GC-FID	ST	226-01	48			
Cupric carbonate as Cu (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300			960		1000-4000		varies		ICP-AES	F/CST	225-3-01	100	C/HLD	225-1	114
Cyanazine	NIOSH 5602			480		1000		8		GC-ECD	ST	226-58	49			
Cyanide (as Cn)	OSHA ID 120	5 mg/m³		120		1000		2		ISE	F/CST IT	225-3-01 225-22	100 70	IMP	225-36-2	70
Cyanides, aerosol & gas	NIOSH 7904		5 mg/m³ (10 min)	120		500		4		ISE	FLT IMP C/HLD	225-17-32 Δ 225-36-2 225-1	106 70 114	CST IT	225-2LF 225-22	113 70
Cyanogen	OSHA PV2104			12		200		1		GC-NPD	ST	226-117	50			
Cyanuric acid	NIOSH 5030			480		1000		8		HPLC-UV	F/CST	225-802	105	C/HLD	225-1	114
Cyclohexane	Internal					15.6 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-103	96
Cyclohexane	Internal					15.6 ml/min		8-24 hrs		SE, GC	PS	690-105	96			
Cyclohexane (hydrocarbons, BP 36 to 216 C)	NIOSH 1500	300		2.5-5		10-200		varies		GC-FID	ST	226-01	48			
Cyclohexanol (alcohols combined)	NIOSH 1405	50 (skin)		1-10		10-200		varies		GC-FID	ST	226-01	48			
Cyclohexanol (alcohols III)	NIOSH 1402	50		10		20(50)		8(3.3)		GC-FID	ST	226-01	48			
Cyclohexanone	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37
Cyclohexanone	Internal					15.6 ml/min		8-24 hrs		TD, GC	PS PS	690-101 690-104	or 96	PS	690-103	or
Cyclohexanone	Internal					15.6 ml/min		8-24 hrs		SE, GC	PS	690-105	96			
Cyclohexanone	OSHA 01	50		10		20(50)		8(3.3)		GC-FID	ST	226-110	50			
Cyclohexanone (Ketones I)	NIOSH 1300	25		10		20(50)		8(3.3)		GC-FID	ST	226-01	48			
Cyclohexanone (Ketones I)	NIOSH 2555			1-10		10-200		varies		GC-FID	ST	NA SKC				
Cyclohexene (hydrocarbons, BP 36 to 216 C)	NIOSH 1500	300		5-7		10-200		varies		GC-FID	ST	226-01	48			
Cyclohexylamine	OSHA PV2016			20		200		100 min		GC-FID	ST	226-98	50			
Cyclonite (RDX)	OSHA PV2135	1.5 mg/m³		120		1000				HPLC-UV	F/CST	225-709	108	C/HLD	225-1	114
Cyhexatin	NIOSH 5504	0.1 mg/m³		500		1500				AA-GF	F/CST C/HLD	225-709 225-1	108 114	ST	226-30	48
Cypermethrin	OSHA PV2063			60		1000		60 min		GC-ECD	ST	226-30-16	48	TH	224-29V	37
2,4-D (2,4-dichlorophenoxyacetic acid)	NIOSH 5001	10 mg/m³		180		1000		3		HPLC-UV	F/CST	225-706	108	C/HLD	225-1	114
2,4-D (2-butoxyethyl ester)	NIOSH 5602			480		1000		8		GC-ECD	ST	226-58	49			
2,4-D (2-butoxyethyl ester)	NIOSH 5602			480		1000		8		GC-ECD	ST	226-58	49			
2,4-D acid	NIOSH 5602	10		480		1000		8		GC-ECD	ST	226-58	49			

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞																	
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time											
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number								
2,4-D, BE	NIOSH 5602			480		1000		8		GC-ECD	ST	226-58	49						
2,4-D, EH	NIOSH 5602			480		1000		8		GC-ECD	ST	226-58	49						
2,4-D, ME (2,4-dichlorophenoxyacetic acid)	NIOSH 5602			480		1000		8		GC-ECD	ST	226-58	49						
Dacthal	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54						
DBP *(see dibutyl phthalate)*	OSHA 104																		
p,p-DDE	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54						
p,p-DDT	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54						
DDVP (dichlorvos)	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54						
Decabromodiphenyl oxide	NIOSH 2559			48-960		2000		varies		HPLC-UV	FLT CST	225-1822 225-2LF	107 113	SP	225-27	115			
n-Decane	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
n-Decane	Internal					12.2 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-104	96			
n-Decane	Internal					12.2 ml/min		8-24 hrs		SE, GC	PS	690-105	96						
n-Decane (hydrocarbons, BP 36 to 216 C)	NIOSH 1500			2		10-50		varies		GC-FID	ST	226-01	48						
DEHP *(see di-2-ethylhexyl phthalate)*	OSHA 104																		
Demeton	NIOSH 5514	0.1 mg/m³		480		1000		8		GC-FPD	FLT CST C/HLD	225-5 225-2LF 225-1	100 113 114	SCN ST	225-26 226-30-05	115 48			
DEP *(see diethyl phthalate)*	OSHA 104																		
Desflurane	OSHA 106			3		50		1		GC-FID	ST	226-81A	49						
Di-(2-ethylhexyl) phthalate (DEHP)	NIOSH 5020			180		1000		3		GC-FID	F/CST	225-3-01	100	C/HLD	225-1	114			
Di(ethyleneglycol) ethyl ether acrylate	OSHA PV2132	1 mg/m³		48		200		4		GC-FID	ST	226-110	50						
Diacetone alcohol (alcohols combined)	NIOSH 1405	50		1-10		10-200		varies		GC-FID	ST	226-01	48						
Diacetone alcohol (alcohols III)	NIOSH 1402	50		10		20(50)		8(3.3)		GC-FID	ST	226-01	48						
Diacetyl	OSHA 1012	0.005	0.025	9	3	50	200	3	15	GC-ECD	ST	226-183	51						
Diallyl disulfide	OSHA PV2086			10		20(50)		8(3.3)		GC-FPD	ST	226-110	50						
1,2-Diaminoethane	NIOSH 2540			10		100		1.7		HPLC-UV	ST	226-30-18	48						
o-Dianisidine	OSHA 71			100	15	1000	1000	100 min		GC-ECD	CF/CST	225-9004	68	C/HLD	225-1	114			
o-Dianisidine dyes (dyes, benzidine)	NIOSH 5013	LFC		150(@0.1mg/m³) -500		1000-3000		varies		HPLC-UV	FLT C/HLD	225-17P 225-1	106 114	CST	225-3LF	113			
Diazinon	ASTM D 4861			240-7200		1000-5000		4-24		GC-NPD	PUF	226-92	54						
Diazinon	OSHA 62			480		1000		8		GC-FPD	ST	226-30-16	48	TH	224-29V	37			
Diazinon (Organophosphorus Pesticides)	NIOSH 5600	0.1 mg/m³		240		1000		4		GC-FPD	ST	226-58	49						
Diazomethane	NIOSH 2515	0.2		10		200		50 min		GC-FID	ST	226-23	48						
Dibenz(a,h)anthracene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m³ (max)		225 L/min		1-24		GC-MS	PUF	226-131	55	FLT	225-1808	107			
Dibenz(a,h)anthracene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Dibenz(a,h)anthracene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-FD	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Dibenz[a,h]anthracene (1,2,5,6-dibenzanthracene) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m³ (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST	226-57	49						
Dibromodifluoromethane (difluorodibromomethane)	NIOSH 1012	100		10		20(50)		8(3.3)		GC-FID	ST	226-01	48						
1,2-Dibromoethane (ethylene dibromide)	NIOSH 1008	0.045	0.13	24	3	50	200	8	15	GC-ECD	ST	226-01	48						
2-Dibutyl aminoethanol (aminoethanol compounds I)	NIOSH 2007	2		10		20(50)		8(3.3)		GC-FID	ST	226-10-04	48						
Dibutyl phosphate	NIOSH 5017	1	2	240		2000		2		GC-FPD	FLT C/HLD	225-17-01 225-1	106 114	CST	225-2LF	113			
Dibutyl phthalate	NIOSH 5020	5 mg/m³		100		1000		100 min		GC-FID	F/CST	225-3-01	100	C/HLD	225-1	114			
Dibutyl phthalate (DBP)	OSHA 104	5 mg/m³		240		1000		4		GC-FID	ST	226-56	49						
Dibutyltin bis (isooctyl mercaptoacetate) (organotin compounds as Sn)	NIOSH 5504	0.1 mg/m³		480		1000		8		HPLC & AA-GF	ST C/HLD	226-30 225-1	48 114	F/CST	225-709	108			
Dibutyltin dilaurate (as Sn)	OSHA ID 218SG			500		1000		500 min		AA	F/CST	225-3-01	100	C/HLD	225-1	114			

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞															
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time									
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number						
Dibutyltin maleate (as Sn)	OSHA ID 224SG			200		1000		200 min		AA-GF	F/CST	225-3-01	100	C/HLD	225-1	114	
2,2-Dichloro-1,1,1-trifluoroethane	NON 50			9		50		3		GC-FID	ST	226-09	48				
1,1-Dichloro-1-fluoroethane	OSHA 113			1		50		20 min		GC-FID	ST	NA SKC					
1,1-Dichloro-1-nitroethane	NIOSH 1601	2		1.5-15		10-1000				GC-FID	ST	226-81A	49				
1,2-Dichlorobenzene	Internal					12.5 ml/min		8-24 hrs		TD, GC	PS PS	690-101 690-104	or 96	PS	690-103	96	
1,2-Dichlorobenzene	Internal					12.5 ml/min		8-24 hrs		SE, GC	PS	690-105	96				
m-Dichlorobenzene	NIOSH 1003			3		10-200				GC-FID	ST	226-01	48				
o-Dichlorobenzene (hydrocarbons, halogenated)	NIOSH 1003	50		3		10-200		varies		GC-FID	ST	226-01	48				
p-Dichlorobenzene (hydrocarbons, halogenated)	NIOSH 1003	1.7 (LOQ)		3		10-200		varies		GC-FID	ST	226-01	48				
3,3'-Dichlorobenzidine	OSHA 65			100		1000		100 min		GC-ECD	CF/CST	225-9004	68	C/HLD	225-1	114	
Dichlorodifluoromethane	NIOSH 1018	1000		3		20		2.5		GC-FID	ST	226-01	48	ST	226-09	48	
1,2-Dichloroethane	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37	
1,2-Dichloroethane	Internal					14.2 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-103	96	
1,2-Dichloroethane	Internal					14.2 ml/min		1-7 days		SE, GC	PS	690-105	96				
1,1-Dichloroethane (Hydrocarbons, Halogenated)	NIOSH 1003	100		10		10-200		varies		GC-FID	ST	226-01	48				
Dichloroethyl ether	NIOSH 1004	5	10	10		20(50)		8(3.3)		GC-FID	ST	226-01	48				
1,2-Dichloroethylene (hydrocarbons, halogenated)	NIOSH 1003	200		3		10-200		varies		GC-FID	ST	226-01	48				
Dichlorofluoromethane	NIOSH 2516	10		3		20		2.5		GC-FID	ST	226-25	48				
Dichloromethane (methylene chloride)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37	
Dichloromethane (methylene chloride)	Internal					14.7 ml/min		8 hrs-3 days		SE, GC	PS	690-105	96				
Dichloromethane (methylene chloride)	Internal					0.54 ml/min		1-7 days		SE, GC	PS	690-105	with	RR	690-300	96	
Dichloromethane *(see methylene chloride)*																	
Dichloromonofluoromethane (dichlorofluoromethane)	NIOSH 2516	10		3		20		2		GC-FID	ST	226-09 ♠	48				
2,4-Dichlorophenoxyacetic acid (2,4-D)	NIOSH 5001	10 mg/m³		180		1000		3		HPLC-UV	F/CST	225-709	108	C/HLD	225-1	114	
1,2-Dichloropropane (propylene dichloride)	Internal					14.3 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-103	96	
1,2-Dichloropropane (propylene dichloride)	Internal					14.3 ml/min		8-24 hrs		SE, GC	PS	690-105	96				
1,2-Dichloropropane (propylene dichloride)	NIOSH 1013	LFC		3		20		2.5		GC-ECN	ST	226-81A	49				
cis-1,3-Dichloropropene	Internal					13.6 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-103	96	
cis-1,3-Dichloropropene	Internal					13.6 ml/min		8-24 hrs		SE, GC	PS	690-105	96				
trans-1,3-Dichloropropene	Internal					14.4 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-103	96	
trans-1,3-Dichloropropene	Internal					14.4 ml/min		8-24 hrs		SE, GC	PS	690-105	96				
2,2-Dichloropropionic acid	OSHA PV2017			10		200		50 min		HPLC-UV	ST	226-10	48				
1,2-Dichlorotetrafluoroethane (dichlorodifluoromethane)	NIOSH 1018	1000		3		20		2.5		GC-FID	ST	226-01	48	ST	226-09	48	
Dichlorotrifluoroethane	NON 50			9		50		3		GC-FID	ST	226-09	48				
Dichlorvos (DDVP)	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54				
Dichlorvos (DDVP)	OSHA 62	1 mg/m³		480		1000		8		GC-FPD	ST	226-30-16	48				
Dicloran	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54				
Dicofol	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54				
Dicrotophos	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF	226-92	54				
Dicrotophos (Bidrin)	OSHA PV2099			480		1000		8		GC-FPD	ST	226-30-16	48				
Dicrotophos (Organophosphorus Pesticides)	NIOSH 5600	0.25 mg/m³		240		1000		4		GC-FPD	ST	226-58	49				
Dicyclopentadiene	OSHA PV2098			10		100		100 min		GC-FID	ST	226-01	48				
Dieldrin	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54				
Diesel emissions *(see elemental carbon)*	NIOSH 5040									TOA-FID							
Diesel exhaust particles *(see elemental carbon)*	NIOSH 5040									TOA-FID							

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Diesel particulate matter	ASTM D 6877			varies		1000-4000		varies		EGA-TOS	DPM 225-317 or F/CST 225-401 107
Diesel particulate matter	MSHA 30CFR57	350 µg/m³ (total carbon)		varies		2000		varies		TOA-FID	DPM 225-317 107 C/HLD 225-1 114 CYC 225-105 124
Diesel particulate matter	MSHA 30CFR57	350 µg/m³ (total carbon)		varies		varies		varies		TOA-FID	F/CST 225-401 107 C/HLD 225-1 114 CYC 225-100 124
Diethanolamine	OSHA PV2018			10		100		100 min		HPLC-UV	ST 226-30-18 48
Diethanolamine (DEA) (Aminoethanol Compounds II)	NIOSH 3509	3		240		1000		4		IC	IMP 225-36-1 70 IT 225-22 70
Diethyl ether (ethyl ether)	NIOSH 1610			0.25-3		10-200		varies		GC-FID	ST 226-01 48
Diethyl ketone (3-pentanone)	OSHA PV2136			10		100		100		GC-FID	ST NA SKC
Diethyl phthalate (DEP)	OSHA 104			240		1000		4		GC-FID	ST 226-56 49
Diethylamine	OSHA 41	25		10	3	200	200	50 min	15	HPLC	ST 226-96 50
Diethylamine (amines, aliphatic)	NIOSH 2010	10	25	24	3	50	200	8	15	GC-FID	ST 226-10 48
2-Diethylaminoethanol (aminoethanol compounds I)	NIOSH 2007	10		10		20(50)		8(3.3)		GC-FID	ST 226-10-04 48
Diethylene dioxide *(see dioxane)*											
Diethylene ether *(see dioxane)*											
Diethylene glycol (glycols)	NIOSH 5523			5-60		500-2000		varies		GC-FID	ST 226-57 49
Diethylenetriamine	OSHA 60			10		100		100 min		HPLC-UV	ST 226-30-18 48
Difluorodibromomethane	NIOSH 1012	100		6		50		2		GC-FID	ST 226-01 48
Diglycidyl ether of bisphenol A	OSHA 1018			240		1000		240 (min)		HPLC-UV/PDA	F/CST 225-709 108 C/HLD 225-1 114
Dihexyl phthalate	OSHA PV2076			240		1000		4		GC-FID	ST 226-56 49
Dihydrocapsaicin	NIOSH 5041			480	15	1000	1000	8	15	HPLC-FD	FLT 225-16 108 CST 225-32 114
Diisobutyl ketone	Internal					10.3 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
Diisobutyl ketone	Internal					10.3 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Diisobutyl ketone (Ketones I)	NIOSH 1300	25		10		20(50)		8(3.3)		GC-FID	ST 226-01 48
Diisobutyl ketone (Ketones I)	NIOSH 2555			1-10		10-200		varies		GC-FID	ST NA SKC
Dimethazone	OSHA PV2066			60		1000		1		GC-ECD	ST 226-30-16 48
Dimethoate	OSHA PV2113			480		1000		8		GC-FPD	ST 226-30-16 48
Dimethoxymethane (methylal)	NIOSH 1611	1000		2		20		1.5		GC-FID	ST 226-01 48
Dimethyl adipate	OSHA PV2019			20		200		100 min		GC-FID	ST 226-01 48
Dimethyl amine		10				18		8 hrs		HPLC-UV	PS 500-400 92
Dimethyl arsenic acid (arsenic, organo-)	NIOSH 5022			960		2000		8		IC-AA	FLT 225-17-01 106 CST 225-2LF 113 C/HLD 225-1 114
Dimethyl disulfide	NON 42			12		1000		12 min		GC-FPD	SB 253-10 or SB 263-10 or SB 231-10 60
Dimethyl glutarate	OSHA PV2020			20		200		100 min		GC-FID	ST 226-01 48
Dimethyl phthalate (DMP)	OSHA 104	5 mg/m³		240		1000		4		GC-FID	ST 226-56 49
Dimethyl succinate	OSHA PV2021			20		200		100 min		GC-FID	ST 226-01 48
Dimethyl sulfate	NIOSH 2524	0.1 (8 hrs)		12		50		4		GC-ECN	ST 226-114 50
Dimethyl sulfate	OSHA PV2147	1		10		100		100 min		GC-FPD	ST 226-115 50
Dimethyl sulfide	NON 42			12		1000		12 min		GC-FPD	SB 263-10 or SB 231-10 60
2,3-Dimethyl-2,3-dinitrobutane	NON 44	0.15 mg/m³ OEL		10		200		50 min		GC-ECD	ST 226-35-03 48
Dimethylacetamide	NIOSH 2004	10		80		1000		8		GC-FID	ST 226-10 48
Dimethylamine	NIOSH 2010	10		24		50		8		GC-FID	ST 226-10 48
Dimethylamine	OSHA 34	10		10		20		8		HPLC	ST 226-96 50
2-Dimethylamino ethanol	NIOSH 2561			10-24		20-100		varies		GC-FID	ST 226-94 50
1-Dimethylamino-2-propanol	NIOSH 2561			10-24		20-100		varies		GC-FID	ST 226-94 50
2,4-Dimethylaminobenzene (Amines, Aromatic)	NIOSH 2002	2		3-20		20-200		15 min-8 hrs		GC-FID or GC-NSD	ST 226-10 48

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞																	
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time											
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number								
N,N-Dimethylaniline	OSHA PV2064	5		30		200		2.5		GC-FID	ST	226-98	50						
N,N-Dimethylaniline (Amines, Aromatic)	NIOSH 2002	5	10	30	3	20-1000		8	15	GC-FID or GC-NSD	ST	226-10	48						
2,5-Dimethylbenzaldehyde	ASTM D 5197			varies		500-1200		5 min-24 hrs		HPLC-UV	ST	226-120 ○	or	ST	226-119	50			
N,N-Dimethylethanolamine	NIOSH 2561			10-24		20-100		varies		GC-FID	ST	226-94	50						
N,N-Dimethylformamide	NIOSH 2004	10		24		50		8		GC-FID	ST	226-10	48						
N,N-Dimethylformamide	OSHA 66	10		9.6	3	20	200	8	15	GC-NPD	ST	226-01	48						
1,1-Dimethylhydrazine	NIOSH 3515	0.06 (120 min)		60		1000		1		VAS	IMP	225-36-2	70	IT	225-22	70			
N,N-Dimethyl-p-toluidine (Amines, Aromatic)	NIOSH 2002			Not determined		20-1000		Not determined		GC-FID or GC-NSD	ST	226-10	48						
Dimethyltin dichloride	NIOSH 5526	0.1 mg/m³		15-75		250-1000		0.25-5 hrs		GC-FPD	ST	226-30-16	48						
Di-n-hexyl phthalate	OSHA PV2076			240		1000		4		GC-FID	ST	226-56	49						
Dinitrotoluene (DNT)	OSHA 44	1.5 mg/m³		60		1000		1		GC-TEA	ST	226-56	49						
Di-n-octyl phthalate (DNOP)	OSHA 104			240		1000		4		GC-FID	ST	226-56	49						
n-Dioctyl phthalate (DNOP)	OSHA 104			240		1000		4		GC-FID	ST	226-56	49						
Dioxane (diethylene dioxide)	NIOSH 1602	1 (30 min)		10		20(50)		8(3.3)		GC-FID	ST	226-01	48						
Dioxin (including, PHDDs, PCDDs, PBDDs)	EPA TO-9A			325-400 m³		200-280 L/ min		24 hrs		HRGC-HRMS	PUF	226-131	55	FLT	225-1808	107			
Diphenyl	NIOSH 2530	0.2		30		100		5		GC-FID	ST	226-35-01	48						
Diphenyl ether	OSHA PV2022	0.2		20		200		100 min		GC-FID	ST	226-95	50						
Diphenylamine	OSHA 78			100		1000		100 min		HPLC-UV	CF/CST	225-9004	68	C/HLD	225-1	114			
Diphenylmethane-4,4'-diisocyanate (4,4-methylene bisphenyl isocyanate) (isocyanates)	NIOSH 5521	50 µg/m³	200 µg/m³ (10 min) C	480	10	1000	1000	8	10	HPLC-ELCHM & HPLC-UV	IMP	225-36-1	70	IT	225-22	70			
Dipropyl disulfide	OSHA PV2086			10		20(50)		8(3.3)		GC-FPD	ST	226-110	50						
Dipropylene glycol methyl ether	OSHA 101	100		10		100		100 min		GC-FID	ST	226-01	48						
Dipropylene glycol methyl ether (glycol ethers)	NIOSH 2554			3-25		100-200		varies		GC-FID	ST	226-81A	49						
Dipropylene glycol monomethyl ether (glycol ethers)	NIOSH 2554			3-25		100-200		varies		GC-FID	ST	226-81A	49						
Direct black 38 (dyes, benzidine)	NIOSH 5013	LFC		150(@0.1mg/m³) -500		1000-3000		varies		HPLC	FLT C/HLD	225-17P 225-1	106 114	CST	225-3LF	113			
Direct blue 6 (dyes, benzidine)	NIOSH 5013	LFC		150(@0.1mg/m³) -500		1000-3000		varies		HPLC	FLT C/HLD	225-17P 225-1	106 114	CST	225-3LF	113			
Direct blue 8 (dyes, benzidine)	NIOSH 5013	LFC		150(@0.1mg/m³) -500		1000-3000		varies		HPLC	FLT C/HLD	225-17P 225-1	106 114	CST	225-3LF	113			
Direct brown 95 (dyes, benzidine)	NIOSH 5013	LFC		150(@0.1mg/m³) -500		1000-3000		varies		HPLC	FLT C/HLD	225-17P 225-1	106 114	CST	225-3LF	113			
Direct red 2 (dyes, benzidine)	NIOSH 5013	LFC		150(@0.1mg/m³) -500		1000-3000		varies		HPLC	FLT C/HLD	225-17P 225-1	106 114	CST	225-3LF	113			
Direct red 28 (dyes, benzidine)	NIOSH 5013	LFC		150(@0.1mg/m³) -500		1000-3000		varies		HPLC	FLT C/HLD	225-17P 225-1	106 114	CST	225-3LF	113			
Di-sec-octyl phthalate *(see di-[2-ethylhexy] phthalate)*																			
Disulfoton	OSHA PV2105			480		1000		8		GC-FPD	ST	226-30-16	48						
Disulfoton (Organophosphorus Pesticides)	NIOSH 5600	0.1 mg/m³		240		1000		4		GC-FPD	ST	226-58	49						
Diuron	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF	226-92	54						
Diuron (Organonitrogen Pesticides)	NIOSH 5601	10 mg/m³		240		1000		4		HPLC-UV	ST	226-58	or	ST	226-30-16	48			
Divinyl benzene	OSHA 89			12		50		4		GC-FID	ST	226-73	49						
DMP *(see dimethyl phthalate)*	OSHA 104																		
DNOP *(see di-n-octyl phthalate)*	OSHA 104																		
DNT (dinitrotoluene)	OSHA 44	1.5 mg/m³		60		1000		1		GC-TEA	ST	226-56	49						
n-Dodecane	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
Dursban (chlorpyrifos)(organophosphorus pesticides)	NIOSH 5600	0.2 mg/m³	0.6 mg/m³	240		1000		4		GC-FPD	ST	226-58	49						

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Dust (particulates, total)	NIOSH 0500			133		2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Dust, inorganic					15-150		15,000		1-10 min	varies	STC 225-9820 112
Dust, respirable	OSHA PV2121	5.0 mg/m³		varies		varies		varies		GR	FLT 225-803 105 C/HLD 225-1 114 CYC 225-105 124
Dust, respirable (particulates)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Dust, respirable (in workplace atmospheres)	ASTM D 4532			varies		2500		varies		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Dust, total	OSHA PV2121	15 mg/m³		720		1500		8		GR	FLT 225-802 105 C/HLD 225-1 114
Dust, total nuisance (particulates)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Dust, total, particulates not otherwise regulated	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Dyes, benzidine, o-tolidine, o-dianisidine	NIOSH 5013	LFC		150(@0.1mg/m³) -500		1000-3000		varies		HPLC-UV	FLT 225-17P 106 CST 225-3LF 113 C/HLD 225-1 114
Elemental carbon (diesel exhaust)	MSHA			varies		varies		varies		EGA-TOS	DPM 225-317 107 CYC 225-105 124
Elemental carbon (diesel exhaust)	NIOSH 5040			varies		varies		varies		TOA-FID	F/CST 225-401 107 CYC 225-100 124 C/HLD 225-1 114
Elements by Cellulosic Internal Capsule Sampler *(see specific element)*	NIOSH 7306	Varies		Varies		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Elements by ICP Aqua Regia ashing *(see specific element)*	NIOSH 7301	varies		varies		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Elements by ICP HNO_3 digestion *(see specific element)*	NIOSH 7303	varies		varies		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Elements by ICP $HNO_3/HClO_4$ ashing *(see specific element)*	NIOSH 7300	varies		varies		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Elements on wipes *(see specific element)*	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Emery (corundum) (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Emery (corundum) (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Endosulfan (thiodan)	OSHA PV2023			60		1000		1		GC-ECD	ST 226-30-16 48
Endotoxins (bacteria in air)	NON 48			62.5-375		12,500 +		5-30		varies	BS 225-9595 136 VT 225-9598A ◊ 136
Endrin	NIOSH 5519	0.1 mg/m³		240		1000		4		GC-ECD	CST 225-2LF 113 FLT 225-5 100 SCN 225-26 115 ST NA SKC C/HLD 225-1 114
Enflurane (ethrane)	OSHA 103			12		50		4		GC-FID	ST 226-81A 49
Enflurane (ethrane)	OSHA 29			10		20		8		GC-FID	ST 226-01 48
Environmental tobacco smoke (nicotine & 3-ethenylpyridine)	NON 49			90-720		1500		1-8		GC-NSD	ST 226-170 51
Environmental tobacco smoke (respirable particles)	ASTM D 5955			varies		varies		varies		GR & HPLC-UV & HPLC-FD	FLT 225-17-32 106 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Environmental tobacco smoke (solanesol, respirable particles)	ASTM D 6271			150-3600		2500		1-24		HPLC-UV	FLT 225-17-32 106 CST 225-3LF 113 CYC 225-01-02 125 C/HLD 225-1 114
Epichlorohydrin	NIOSH 1010	LFC		10	3	20(50)	200	8(3.3)	15	GC-FID	ST 226-01 48
EPN	NIOSH 5012	0.5 mg/m³		480		1000		8		GC-FPD	F/CST 225-709 108 C/HLD 225-1 114
1,2-Epoxypropane *(see propylene oxide)*											
tris(2,3-epoxypropyl)isocyanurate	OSHA 1024			180		1000		3		GC-FID	FLT 225-7 108 CST 225-2LF 113 SP 225-27 115 C/HLD 225-1 114
2,4,D-Esters	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Esters I *(see specific compounds)*	NIOSH 1450	varies		1-10		varies		varies		GC-FID	ST 226-01 48
Estradiol	OSHA PV2001			240		1000		4		HPLC-UV	F/CST 225-706 108 C/HLD 225-1 114
Estriol	OSHA PV2001			240		1000		4		HPLC-UV	F/CST 225-706 108 C/HLD 225-1 114
Estrone	OSHA PV2001			240		1000		4		HPLC-UV	F/CST 225-706 108 C/HLD 225-1 114
1,2-Ethanediol (ethylene glycol) (glycols)	NIOSH 5523			5-60		500-2000		varies		GC-FID	ST 226-57 49
1,2-Ethanediol dinitrate	OSHA 43	0.2 (C)		15		1000		15		HPLC-TEA	ST 226-35-03 48
Ethanol (ethyl alcohol)	OSHA 5001	1000		12		50		4			ST 226-82 50

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞									
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time			
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Ethanol (ethyl alcohol)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Ethanol (ethyl alcohol)	Internal					20.3 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Ethanolamine	OSHA PV2111	3		10	1.5	100	100	100 min	15	HPLC-UV	ST 226-30-18 48
3-Ethenylpyridine	NON 49			90-720		1500		1-8		GC-NSD	ST 226-170 51
3-Ethenylpyridine & nicotine	ASTM D 5075			90-2160		1500		1-24		GC-NPD	ST 226-93 50
Ethion (Organophosphorus Pesticides)	NIOSH 5600	0.4 mg/m³		240		1000		4		GC-FPD	ST 226-58 49
Ethoprop (Organophosphorus Pesticides)	NIOSH 5600			240		1000		4		GC-FPD	ST 226-58 49
2-Ethoxyethanol	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
2-Ethoxyethanol (alcohols IV)	NIOSH 1403	0.5 (skin)		1-6		10-50		varies		GC-FID	ST 226-01 48
2-Ethoxyethanol (CELLOSOLVE solvent) (alcohols IV)	NIOSH 1403	0.5 (skin)		1-6		10-50		varies		GC-FID	ST 226-01 48
2-Ethoxyethyl acetate	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
2-Ethoxyethyl acetate (Esters I)	NIOSH 1450	0.5 (skin)		1-10		10-200		varies		GC-FID	ST 226-01 48
Ethrane (enflurane)	OSHA 29			10		100		1.6		GC-FID	ST 226-01 48
Ethyl 2-cyanoacrylate	OSHA 55			12		100		2		HPLC-UV	ST 226-98 50
Ethyl acetate	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Ethyl acetate	Internal					13.1 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
Ethyl acetate	Internal					13.1 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Ethyl acetate	NIOSH 1457	400		10		20		8		GC-FID	ST 226-01 48
Ethyl acrylate	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Ethyl acrylate	Internal					13.7 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
Ethyl acrylate	Internal					13.7 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Ethyl acrylate	NON 54	5	15	10	3	20	200	8	15	GC-FID	ST 226-81A 49
Ethyl acrylate	OSHA 92	25		12	0.75	50	50	4	15	GC-FID	ST 226-73 49
Ethyl acrylate (Esters I)	NIOSH 1450	4 (LOQ)		1-10		10-200		varies		GC-FID	ST 226-01 48
Ethyl alcohol (ethanol)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Ethyl alcohol (ethanol)	Internal					20.3 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Ethyl alcohol (ethanol)	OSHA 5001	1000		12		50		4		GC-FID	ST 226-82 50
Ethyl alcohol (ethanol) (Alcohols I)	NIOSH 1400	1000		1		50		20 min		GC-FID	ST 226-01 48
Ethyl amyl ketone	NIOSH 1301	50		25		200		2		GC-FID	ST 226-01 48
Ethyl benzene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Ethyl benzene	Internal					0.41 ml/min		24 hrs-7 days		TD, GC	PS 690-101 or PS 690-103 or PS 690-104 with RR 690-300 96
Ethyl benzene	Internal					12.9 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 or PS 690-104 96
Ethyl benzene	Internal					12.9 ml/min		8 hrs-30 days		SE, GC	PS 690-105 96
Ethyl benzene	OSHA 1002	100				13.83		8		GC-FID	PS 575-002 82
Ethyl benzene	OSHA 1002	100		12		50		4		GC-FID	ST 226-01 48
Ethyl benzene (Hydrocarbons, Aromatic)	NIOSH 1501	100	125	1-24	1-24	10-200	10-200	varies	varies	GC-FID	ST 226-01 48
Ethyl bromide (bromoethane)	NIOSH 1011			4		20		3.3		GC-FID	ST 226-01 48
Ethyl butyl ketone (3-heptanone) (Ketones II)	NIOSH 2553	50		1-25		10-200		varies		GC-FID	ST NA SKC
Ethyl butyl ketone (3-heptanone) (Ketones II)	NIOSH 1301	50		24		200		2		GC-FID	ST 226-01 48
Ethyl chloride	NIOSH 2519			3		50		1		GC-FID	ST 226-25 48
Ethyl ether (ethyl ether)	NIOSH 1610			0.25-3		10-200		varies		GC-FID	ST 226-01 48
Ethyl formate	NIOSH 1452	100		10		20		8		GC-FID	ST 226-01 48
Ethyl lactate	OSHA PV2081			10		200		50 min		GC-FID	ST 226-01 48

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Ethyl mercaptan (mercaptans)	NIOSH 2542		0.5 (15 min)	48	12	100	200	8	60	GC-FPD	CF/CST 225-9007 68 C/HLD 225-1 114
Ethyl methacrylate	Internal					13.1 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
Ethyl methacrylate	Internal					13.1 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Ethyl methacrylate	NIOSH 2537			1-8		10-50		varies		GC-FID	ST 226-30-06 48
Ethyl methacrylate	OSHA PV2100			10		20(50)		8(3.3)		GC-FID	ST 226-01 48
Ethyl O-(p-nitrophenyl) phenylphosphonothionate (EPN)	NIOSH 5012	0.5 mg/m³		480		1000		8		GC-FPD	F/CST 225-709 108 C/HLD 225-1 114
Ethyl parathion	ASTM D 4861			240-7200		1000-5000		4-24		GC-NPD	PUF 226-92 54
Ethyl silicate	NIOSH S-264	100		9		50		3		GC-FID	ST 226-30-04 48
2-Ethyl toluene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
3-Ethyl toluene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
4-Ethyl toluene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
Ethyl vinyl benzene	OSHA 89			12		50		4		GC-FID	ST 226-73 49
Ethyl-3-ethoxypropionate	OSHA PV2025			10		100		100 min		GC-FID	ST 226-01 48
Ethylamine	OSHA 36	10		10		200		50 min		HPLC-UV	ST 226-96 50
Ethylene chlorohydrin	NIOSH 2513		1	10	3	20(50)	200	8(3.3)	15	GC-FID	ST 226-81A 49
Ethylene dibromide (1,2-dibromoethane)	NIOSH 1008	0.045	0.13 (15 min)	10	3	20(50)	200	8(3.3)	15	GC-ECD	ST 226-01 48
Ethylene dibromide (1,2-dibromoethane)	OSHA 02	20	30	10	1	20(50)	200	8(3.3)	5	GC-ECD	ST 226-01 48
Ethylene dichloride	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
Ethylene dichloride (1,2-dichloroethane)	OSHA 03	50	100	10	3	200	200	1	15	GC-ECD	ST 226-01GWS 48
Ethylene dichloride (1,2-dichloroethane) (hydrocarbons, halogenated)	NIOSH 1003	1	2	3	3	10-200	10-200	varies	varies	GC-FID	ST 226-01 48
Ethylene glycol (glycols)	NIOSH 5523			5-60		500-2000		varies		GC-FID	ST 226-57 49
Ethylene glycol dinitrate	OSHA 43		0.2 (C)		15		1000		15	HPLC-TEA	ST 226-35-03 48
Ethylene glycol dinitrate (nitroglycerine)	NIOSH 2507		0.1 mg/m³		15		1000		15	GC-ECD	ST 226-35-03 48
Ethylene oxide	ASTM D 4413			6	3	100	200	1	15	GC-FID	ST 226-16 or ST 226-36 49
Ethylene oxide	ASTM D 5578			9.6	1.5	20	100	8	15	GC-ECD	ST 226-178 51
Ethylene oxide	NIOSH 1614	0.1	5 (10 min)	24	1.5	100	150	4	10	GC-ECD	ST 226-178 51
Ethylene oxide	OSHA 1010	1	5.0 EL	12	0.75	50	50	4	15	GC-ECD	ST 226-178 51
Ethylene oxide (by portable GC)	NIOSH 3702	0.1	5 (10 min)	varies	varies	20-4000	varies	varies	varies	P GC-PID	SB 232 Series 61
Ethylene oxide (Qazi-Ketcham)	NON 14			10		20(50)		8(3.3)		GC	ST 226-36 49
Ethylene thiourea	NIOSH 5011	LFC		480		2000		4		VAS	F/CST 225-802 105 C/HLD 225-1 114
Ethylene thiourea	OSHA 95			480		2000		4		HPLC-UV	F/CST 225-706 108 C/HLD 225-1 114
Ethylenediamine	NIOSH 2540	10		10		100		1.7		HPLC-UV	ST 226-30-18 48
Ethylenediamine	OSHA 60	10		10		100		100 min		HPLC-UV	ST 226-30-18 48
Ethylenimine	NIOSH 3514			48		200		4		HPLC-UV	IMP 225-36-2 70 IT 225-22 70
2-Ethylhexyl acrylate	OSHA PV2026			12		100		2		GC-FID	ST 226-73 49
di-2-Ethylhexyl phthalate (DEHP)	OSHA 104	5 mg/m³		240		1000		4		GC-FID	ST 226-56 49
ETS *(see environmental tobacco smoke)*	NON 49										
Fenamiphos (Organophosphorus Pesticides)	NIOSH 5600	0.1 mg/m³		240		1000		4		GC-FPD	ST 226-58 49
Fenvalerate	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF 226-92 54
Ferrovanadium dust	OSHA ID 125G	1 mg/m³		480	30	2000	2000	4	15	ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Fibers (bioaerosols)				15-150		15000		1-10 min		varies	STC 225-9820 112
Fibers *(see specific compounds)*											
Fibrous glass (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞																	
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time											
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number								
Fibrous glass (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT CST	225-5-37-P 225-2LF	105 113	C/HLD	225-1	114			
Fibrous glass dust	OSHA ID 160	15 mg/m³	1 fbr/cc EL	60-300	48	500-2500	1600	120		PCM	FLT/CL	225-321	102						
Fluometuron	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF	226-92	54						
Fluoranthene (benzo[jk]fluorene; 1,2-benzacenaphthene; Idryl) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m³ (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST	226-57	49						
Fluoranthene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m³ (max)		225 L/min		1-24		GC-MS	PUF	226-131	55	FLT	225-1808	107			
Fluoranthene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Fluoranthene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-FD	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Fluorene (o-biphenylenemethane; 2,2'-methylenebiphenyl; 9H-fluorene) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m³ (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST	226-57	49						
Fluorene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m³ (max)		225 L/min		1-24		GC-MS	PUF	226-131	55	FLT	225-1808	107			
Fluorene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Fluorene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-UV	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Fluoride (particulate)	NIOSH 7906	2.5 mg/m³		960		2000		8		IC-CD	CF/CST	225-9031	68	C/HLD	225-1	114			
Fluorides	ASTM D 4765			varies		2000		varies		ISE	CF/CST	225-9001	68	C/HLD	225-1	114			
Fluorides (aerosol & gas by ISE)	NIOSH 7902	2.5 mg/m³	6 (HF)	480	22.5	1000	1500	8	15	ISE	CF/CST	225-9001	68	C/HLD	225-1	114			
Fluorides (as F)	OSHA ID 110	2.5 mg/m³		90	22.5	1500	1500	1	15	ISE	CF/CST	225-9001	68	C/HLD	225-1	114			
Fluorine	OSHA ID 110	0.1		480		1000				ISE	IMP	225-36-2	70	IT	225-22	70			
Fluorotrichloromethane (trichlorofluoromethane)	NIOSH 1006	1000		5		20		240		GC-FID	ST	226-09	48						
Folpet	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54						
Fonofos (Dyfonate)	OSHA PV2027			480		1000		8		GC-FPD	ST	226-30-16	48						
Fonofos (Organophosphorus Pesticides)	NIOSH 5600	0.1 mg/m³		240		1000		4		GC-FPD	ST	226-58	49						
Formaldehyde	ASTM D 5197			varies		500-1200		5 min-24 hrs		HPLC-UV	ST	226-120 ○	or	ST	226-119	50			
Formaldehyde	EPA IP-6A					100-1000 ml/min		5 min-24 hrs		HPLC-UV	ST	226-119	or	ST	226-120	50			
Formaldehyde	EPA IP-6C					20.4 ml/min		7 days		HPLC-UV	PS	500-100	92						
Formaldehyde	EPA IP-6C					20.4 ml/min		1-7 days		HPLC-UV	PS	500-100	92						
Formaldehyde	EPA IP-6C					28.6 ml/min		15 min-8 hrs		HPLC-UV	PS	500-100	92						
Formaldehyde	EPA TO-11A					28.6 ml/min		15 min-8 hrs		HPLC-UV	PS	500-100	92						
Formaldehyde	EPA TO-11A					20.4 ml/min		7 days		HPLC-UV	PS	500-100	92						
Formaldehyde	EPA TO-11A					28.6 ml/min		15 min-24 hrs		HPLC-UV	PS	500-100	92						
Formaldehyde	EPA TO-11A			varies		100-2000 ml/min		varies		HPLC-UV	ST	226-119	or	ST	226-120	50			
Formaldehyde	NIOSH 2016	0.016	0.1 (C)	1-<15	1-<15	30-500	30-500	varies	varies	HPLC-UV	ST	226-119 ♠	50						
Formaldehyde	NIOSH 2541	0.016	0.1 (C)	24	1	100	100	4	10	GC-FID	ST	226-118	50						
Formaldehyde	NIOSH 3500	0.016	0.1	96	15	200	1000	8	15	VAS	IMP FLT SCN	225-36-1 225-1709 ** 225-26	70 106 115	IT CST	225-22 225-2LF	70 113			
Formaldehyde	OSHA 1007	0.75	2	13.8	0.43	29.77	29.77	4	15	HPLC-UV	PS	500-100	92						
Formaldehyde	OSHA 52	0.75	2	24	3	100	200	4	15	GC-NPD	ST	226-117	or	ST	226-54	49			
Formaldehyde (Aldehydes, Screening)	NIOSH 2539	0.016	0.1	5		20		4		GC-FID & GC-MS	ST	226-118	50						
Formaldehyde on dust (textile or wood)	NIOSH 5700	0.016	0.1	240		2000		4		HPLC-UV	IOM	225-70A	120	FLT	225-5-25	105			
Formetanate (Organonitrogen Pesticides)	NIOSH 5601			240		1000		4		HPLC-UV	ST	226-58	or	ST	226-30-16	48			
Formic acid	NIOSH 2011	5		24		200		2		IC-CD	FLT ST	225-1728A 226-10-03	106 48	CST C/HLD	225-3-25LF 225-1	113 114			
Formic Acid	NON 61	5				17.7		see method		ICP-AES	PS	500-200	93						

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Freon 113	OSHA 113	1000		1		50		20 min		GC-FID	ST NA SKC
Freon 123	NON 50			9		50		3		GC-FID	ST 226-09 48
Freon 141b	OSHA 113	1000		1		50		20 min		GC-FID	ST NA SKC
Fungi	NIOSH 0800			varies		28,300		varies		varies	BI 225-9611 134
Fungi (in air)					15-150		15000		1-10 min	varies	STC 225-9820 112
Fungi (in air) (BioSampler method)	NON 48			62.5-375		12,500 +		5-30		varies	BS 225-9595 136 VT 225-9598A 136
Furans (including PHDFs, PCDFs, PBDFs)	EPA TO-9A					200-280 L/ min		24 hrs		HRGC-HRMS	PUF 226-131 55 FLT 225-1808 107
Furfural	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Furfural	NIOSH 2529			5		20		4		GC-FID	ST 226-118 50
Furfural	OSHA 72	5		180		1000		3		GC-FID	ST 226-81A 49
Furfural (Aldehydes, Screening)	NIOSH 2539			5		20		4		GC-FID & GC-MS	ST 226-118 50
Furfuryl alcohol	NIOSH 2505	10	15	5		20		4		GC-FID	ST 226-115 50
Gallium (Elements by ICP HNO_3 Digestion)	NIOSH 7303			1-3,300		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Gasoline	OSHA PV2028			10	1.5	20(50)	100	8(3.3)	15	GC-FID	ST 226-01 48
Glass, fibrous *(see asbestos fibers)*	NIOSH 7400										
Glutaraldehyde	NIOSH 2531		0.2		4		200		20	HPLC-UV	ST 226-118 50
Glutaraldehyde	NIOSH 2532		0.2		3		200		15	HPLC-UV	ST 226-119 50
Glutaraldehyde	NON 43			30	15	250	1000	2	15	GC-FID	ST 226-10 48
Glutaraldehyde	OSHA 64				15		1000		15	HPLC-UV	CF/CST 225-9003 68 C/HLD 225-1 114
Glycerin mist (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Glycidol (2,3-epoxy-1-propanol)	NIOSH 1608	25		10		20(50)		8(3.3)		GC-FID	ST 226-01 48
Glycol chlorohydrin *(see ethylene chlorohydrin)*											
Glycol ethers	NIOSH 2554			3-25		100-200		varies		GC-FID	ST 226-81A 49
Glycols	NIOSH 5523			5-60		500-2000		varies		GC-FID	ST 226-57 49
Glyphosate	OSHA PV2067			100		1000		100 min		HPLC-UV	F/CST 225-706 108 C/HLD 225-1 114
Gold	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Gold (Elements by ICP HNO_3 Digestion)	NIOSH 7303			1-3,300		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Graphite (natural) *(see Respirable dust)*	OSHA ID 142 (v4)										
Graphite (synthetic) (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Graphite (synthetic) (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Grunerite fibers *(see asbestos)*	OSHA ID 160										
Gypsum (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Gypsum (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Hafnium	OSHA ID 121	0.5 mg/m³		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Halothane	OSHA 103			12		50		4		GC-FID	ST 226-81A 49
Halothane	OSHA 29			9		100		1.5		GC-FID	ST 226-01 48
HDI *(see hexamethylene diisocyanate)*											
Heptachlor	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Heptachlor	OSHA PV2029	0.5 mg/m³		60		1000		1		GC-ECD	ST 226-30-16 48
Heptachlor (non-occupational exposure)	ASTM D 4947			240-7200	250	1000-5000		4-24		GC-ECD	PUF 226-92 54
Heptachlor epoxide	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Heptanal (Aldehydes, Screening)	NIOSH 2539			5		20		4		GC-FID & GC-MS	ST 226-118 50

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞									
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time			
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
n-Heptane	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
n-Heptane	Internal					13.9 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
n-Heptane	Internal					13.9 ml/min		8-24 hrs		SE, GC	PS 690-105 96
3-Heptanone (ethyl butyl ketone) (Ketones II)	NIOSH 2553	50		1-25		10-200		varies		GC-FID	ST NA SKC
2-Heptanone (methyl n-amyl ketone) (Ketones II)	NIOSH 2553	100		1-25		10-200		varies		GC-FID	ST NA SKC
Hexachloro-1,3-cyclopentadiene	NIOSH 2518	0.01		24		50		8		GC-ECD	ST 226-116 50
Hexachlorobenzene	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Hexachlorobutadiene	NIOSH 2543	0.02		48		100		8		GC-ECD	ST 226-30-04 48
Hexachlorocyclopentadiene	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-124 54
Hexachlorocyclopentadiene (hexachloro-1,3-cyclopentadiene)	NIOSH 2518	0.01		48		100		8		GC-ECD	ST 226-116 50
Hexachloroethane (hydrocarbons, halogenated)	NIOSH 1003	1		10		10-200		varies		GC-FID	ST 226-01 48
Hexamethylene diisocyanate	NIOSH 5522	35 µg/m³	140 µg/m³	360	20	1000	2000	6	10	HPLC-FD	IMP 225-36-1 70 IT 225-22 70
1,6-Hexamethylene diisocyanate	OSHA 5002			15		1000		15 min		HPLC-UV or HPLC-FD	CF/CST 225-9002 or CF/CST 68 CF/CST 225-9022 ▼ C/HLD 225-1 114
1,6-Hexamethylene diisocyanate homopolymer	OSHA 5002			15		1000		15 min		HPLC-UV or HPLC-FD	CF/CST 225-9002 or CF/CST 68 CF/CST 225-9022 ▼ C/HLD 225-1 114
Hexamethylene diisocyanate (gaseous)	ASTM D 6562			15		1000		15 min		HPLC-UV or HPLC-FD	CF/CST 225-9023 or CF/CST 225-9022 ▼ 68 C/HLD 225-1 114
Hexamethylene diisocyanate (HDI) (isocyanates)	OR-OSHA 1010	0.02	0.02	45	5	1000	1000	45 min	5	HPLC	IMP 225-36-1 70 IT 225-22 70 CF/CST 225-9029 68
Hexamethylene diisocyanate (isocyanates)	NIOSH 5521	35 µg/m³	140 µg/m³ (10 min) (C)	480	10	1000	1000	8	10	HPLC-ELCHM & HPLC-UV	IMP 225-36-1 70 IT 225-22 70
1,6-Hexamethylene diisocyanate (isocyanates, total)	NIOSH 5525	35 µg/m³	140 µg/m³ (10 min) (C)	1-500		1000-2000		varies		HPLC-UV	FLT 225-7 108 CST 225-4 113 SP 225-27 or IOM 225-76A 120 FLT 225-702 108
Hexamethylene diisocyanate (monomeric aerosol)	ASTM D 6561			15		1000		15 min		HPLC-UV	CF/CST 225-9023 or CF/CST 225-9022 ▼ 68 C/HLD 225-1 114
Hexamethylene diisocyanate (monomeric gaseous)	ASTM D 6561			15		1000		15 min		HPLC-UV	CF/CST 225-9023 or CF/CST 225-9022 ▼ 68 C/HLD 225-1 114
Hexamethylene diisocyanate (oligomeric aerosol)	ASTM D 6561			15		1000		15 min		HPLC-UV	CF/CST 225-9023 or CF/CST 225-9022 ▼ 68 C/HLD 225-1 114
Hexamethylene diisocyanate biuret (HDI-BT) (isocyanates)	OR-OSHA 1010	1.0 mg/m³	0.5 mg/m³	45	5	1000	1000	45 min	5	HPLC	IMP 225-36-1 70 IT 225-22 70 CF/CST 225-9029 68
Hexamethylene diisocyanate isocyanurate (HDI-IC) (isocyanates)	OR-OSHA 1010	1.0 mg/m³	0.5 mg/m³	45	5	1000	1000	45 min	5	HPLC	IMP 225-36-1 70 IT 225-22 70 CF/CST 225-9029 68
Hexamethylenetetramine	NON 52			15		1000		15 min		GC-NPD or GC-FID	ST 226-57 49
Hexanal	ASTM D 5197			varies		500-1200		5 min-24 hrs		HPLC-UV	ST 226-120 or ST 226-119 50
Hexanal (Aldehydes, Screening)	NIOSH 2539			5		20		4		GC-FID & GC-MS	ST 226-118 50
n-Hexane	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
n-Hexane	Internal					14.3 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
n-Hexane	Internal					14.3 ml/min		8-24 hrs		SE, GC	PS 690-105 96
n-Hexane	NIOSH 1500	50		4		200		20 (min)		GC-FID	ST 226-01 48
n-Hexane	OSHA 5000	500		4.9		50		1.63		GC-FID	ST 226-01 48
1,6-Hexanediol	NIOSH 1500			5	3	200	200			GC-FID	ST 226-01 48
Hexanediol diacrylate	NON 39			480		1000		8		GC-FID	ST 226-56 49
1,6-Hexanediol diacrylate	OSHA PV2133	1 mg/m³		48		200		4		GC-FID	ST 226-110 50
2-Hexanone (Ketones I)	NIOSH 2555			1-10		10-200		varies		GC-FID	ST NA SKC
2-Hexanone (methyl butyl ketone) (Ketones I)	NIOSH 1300	1		10		20(50)		8(3.3)		GC-FID	ST 226-01 48
2-Hexanone (methyl butyl ketone, MBK)	Internal					14.3 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
2-Hexanone (methyl butyl ketone, MBK)	Internal					14.3 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Hexavalent chromium	ASTM D 6832			varies		1000-5000		varies		IC	F/CST 225-802 or F/CST 225-1713 or F/CST 225-709 or F/CST 225-401 107

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Hexavalent chromium	NIOSH 7600	1 µg/m³ (10 hrs)		240		1000		4		VAS	F/CST 225-802 105 C/HLD 225-1 114
Hexavalent chromium	NIOSH 7604	1 µg/m³ (10 hrs)		240		1000		4		IC-CD	F/CST 225-802 105 C/HLD 225-1 114
Hexavalent chromium	NIOSH 7605	0.001 mg/m³ (10 hrs)		1-400		1000-4000		varies		IC-PCD-UV	F/CST 225-802 105 C/HLD 225-1 114
Hexavalent chromium	NIOSH 7703	0.001 mg/m³ (10 hrs)		10-1200		1000-4000		varies		P VAS	F/CST 225-802 105 C/HLD 225-1 114
Hexavalent chromium	OSHA W4001		0.005 mg/m³ (C)							IC-UV	FLT 225-5-37 or FLT 225-1822 107
Hexavalent chromium (CR(VI))	OSHA ID 215 (V2)	0.005 mg/m³		960		2000		8		IC-UV	F/CST 225-802 105 C/HLD 225-1 114
Hexavalent chromium (in settled dust)	NIOSH 9101			bulk	bulk					CLR or VAS or IC	
Hexone	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
Hexone	OSHA 1004	100				13.62		8		GC-FID	PS 575-002 82
Hexone	OSHA 1004	100		12		50		4		GC-FID	ST NA SKC
Hexone (Ketones I)	NIOSH 2555	50		1-10		10-200		varies		GC-FID	ST NA SKC
Hexone (methyl isobutyl ketone) (Ketones I)	NIOSH 1300	50	75	10	3	20(50)	200	8(3.3)	15	GC-FID	ST 226-01 48
sec-Hexyl acetate	NIOSH 1450	50		10		200		50 (min)		GC-FID	ST 226-01 48
Hexylene glycol	OSHA PV2101				3		200		15	GC-FID	ST 226-01 48
HMX	OSHA PV2032			480		1000		8		HPLC-UV	F/CST 225-709 108 C/HLD 225-1 114
Hydrazine	NIOSH 3503		0.03 (120 min)	90		1000		1.5		VAS	IMP 225-36-2 70 IT 225-22 70
Hydrazine	NON 22			96		200		8		CLR	ST 226-42-02 49
Hydrazine	OSHA 108	1		240		1000		4		LC-UV	CF/CST 225-9012 68 C/HLD 225-1 114
Hydrazine	OSHA 20	1		20		100		3.3		HPLC-UV	ST 226-42-02 49
Hydrazoic acid	NON 25				15		1000		15	HPLC-UV	ST 226-55 49
Hydrazoic acid	OSHA ID 211				5		1000		5	IC-UV	ST 226-55 49 CST 225-2LF 113 C/HLD 225-1 114 FLT 225-5-37-P 105 SPC 225-23 115
Hydrocarbons BP 36 to 216 C *(see specific compounds)*	NIOSH 1500	varies		varies		varies		varies		GC-FID	ST 226-01 48
Hydrocarbons, aromatic *(see specific compounds)*	NIOSH 1501	varies		varies		varies		varies		GC-FID	ST 226-01 48
Hydrocarbons, halogenated *(see specific compounds)*	NIOSH 1003	varies		varies		varies		varies		GC-FID	ST 226-01 48
Hydrofluoric acid (fluorides)	NIOSH 7906	3	6	960	30	2000	2000	8	15	IC-CD	CF/CST 225-9031 68 C/HLD 225-1 114
Hydrogen bromide	NIOSH 7907		3		30		2000		15	IC-CD	CF/CST 225-9032 68
Hydrogen bromide	OSHA ID 165SG	3		97	3	200	200	8	15	IC	ST 226-10-03 48
Hydrogen chloride	NIOSH 7907		5		30		2000		15	IC-CD	CF/CST 225-9032 68
Hydrogen chloride (hydrochloric acid)	OSHA ID 174SG		5		7.5		500		15	IC	ST 226-10-03 48
Hydrogen cyanide	NIOSH 6010		4.7		2-90		50-200		varies	VAS	ST 226-210 52 CST 225-710 108
Hydrogen cyanide	NIOSH 6017		4.7		2-90		50-200		varies	IC-ELCHM	ST 226-210 52 CST 225-710 108
Hydrogen cyanide	OSHA 1015	10				28.4		8	15	IC-ELCHM	PS 590-400 94
Hydrogen cyanide	OSHA ID 120	10		120	15	1000	1000	2	15	ISE	CST 225-3LF 113 IT 225-22 70 SP 225-2902 115 IMP 225-36-2 70 FLT 225-5 100
Hydrogen cyanide (cyanides)	NIOSH 7904		5 mg/m³ (10 min)		15		1000		15	ISE	FLT 225-17-32 Δ 106 IMP 225-36-2 70 C/HLD 225-1 114 CST 225-2LF 113 IT 225-22 70
Hydrogen fluoride	NIOSH 7906	3	6	960	30	2000	2000	8	15	IC-CD	CF/CST 225-9031 68 C/HLD 225-1 114
Hydrogen fluoride (as F)	OSHA ID 110	3	6	90	22	1500	1500	1	15	ISE	CF/CST 225-9001 68 C/HLD 225-1 114
Hydrogen fluoride (fluorides)	NIOSH 7902	3	6	480	30	1000	2000	8	15	ISE	CF/CST 225-9001 68 C/HLD 225-1 114
Hydrogen peroxide	OSHA 1019	1.0 (1.4 mg.m³)		240	30	1000	2000	4	15	VAS	CF/CST 225-9030 68 C/HLD 225-1 114
Hydrogen sulfide	NIOSH 6013		10 (10 min)	24	3	100	300	4	10	IC	ST NA SKC

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞									
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time			
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Hydrogen sulfide	NON 42			12		1000		12 min		GC-FPD	SB 231-10 60
Hydrogen sulfide	OSHA 1008	10	20	12	7.5	50	500	4	15	IC	ST 226-177 51
Hydroquinone	NIOSH 5004		2 mg/m^3 (15 min)		30		2000		15	HPLC-UV	F/CST 225-3-01 100 C/HLD 225-1 114
Hydroquinone	OSHA PV2094	2 mg/m^3		20		200		100 min		HPLC-UV	ST 226-98 50
4-Hydroxy-4-methyl-2-pentanone *(see diacetone alcohol)*											
4-Hydroxy-4-methyl-2-petanone (alcohols combined)	NIOSH 1405	50		1-10		10-200		varies		GC-FID	ST 226-01 48
2-Hydroxypropyl acrylate	OSHA PV2078			10		100		100 min		GC-FID	ST 226-73 49
2-Imidazolidinethione (ethylene thiourea)	NIOSH 5011	LFC		480		1000		8		VAS	F/CST 225-803 105 C/HLD 225-1 114
Indeno[1,2,3-cd]pyrene (2,3-phenylenepyrene) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m^3 (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST 226-57 49
Indeno(1,2,3-cd)pyrene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
Indeno(1,2,3-cd)pyrene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m^3 (max)		225 L/min		1-24		GC-MS	PUF 226-131 55 FLT 225-1808 107
Indeno(1,2,3-cd)pyrene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-FD	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
Indium	OSHA ID 121	0.1 mg/m^3		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Indium & compounds (as In)	OSHA ID 121	0.1 mg/m^3		480-960		2000		4-8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Indium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	0.1 mg/m^3		8-2000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Indium (Elements by ICP HNO_3 Digestion)	NIOSH 7303			15-500,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Iodine	NIOSH 6005		0.1		15		1000		15	IC	ST 226-67 49
Iodine	NON 16			48		100		8		IC	ST 226-67 49
Iodine	OSHA ID 212		0.1 (C)		2.5		500		5	IC	ST 226-80 49
Iodine (particulates)	OSHA ID 212		0.1		2.5		500		5	IC	ST 226-142 51
Iodine (vapor)	OSHA ID 212		0.1		2.5		500		5	IC	ST 226-80 49
Iron	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Iron & compounds (as Fe)	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Iron (bulk)	OSHA ID 125G			480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Iron (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	5 mg/m^3 (dust, fume) as Fe		2-500		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Iron (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	5 mg/m^3 (dust, fume)		5-100		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Iron (Elements by ICP HNO_3 Digestion)	NIOSH 7303	0.5 mg/m^3 (dust, fume)		1-5,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Iron (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	5 mg/m^3 (dust, fume)		5-100		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Iron (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Iron oxide (Elements by ICP HNO_3 Digestion)	NIOSH 7303			1-5,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Iron oxide fume	OSHA ID 121	10 mg/m^3		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Iron oxide fume	OSHA ID 125G	10 mg/m^3		480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Iron salts, soluble (as Fe)	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Isoamyl acetate (Esters I)	NIOSH 1450	100		1-10		10-200		varies		GC-FID	ST 226-01 48
Isoamyl alcohol (alcohols combined)	NIOSH 1405	100	125 (skin)	1-10	1-10	10-200	10-200	varies	varies	GC-FID	ST 226-01 48
Isoamyl alcohol (alcohols III)	NIOSH 1402	100	125	10	3	20(50)	200	8(3.3)	15	GC-FID	ST 226-01 48
Isobutanol (isobutyl alcohol)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Isobutyl acetate	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Isobutyl acetate	OSHA 1009	150				13.16	13.16	8	15	GC-FID	PS 575-002 82
Isobutyl acetate	OSHA 1009	150		12	0.75	50	50	4	15	GC-FID	ST 226-01 48
Isobutyl acetate (Esters I)	NIOSH 1450	150		1-10		10-200		varies		GC-FID	ST 226-01 48
Isobutyl alcohol	OSHA 5001	200		12		4				GC-FID	ST 226-82 50
Isobutyl alcohol (alcohols combined)	NIOSH 1405	50		2-10		10-200		varies		GC-FID	ST 226-01 48
Isobutyl alcohol (alcohols II)	NIOSH 1401	50		10		20(50)		8(3.3)		GC-FID	ST 226-01 48
Isobutyl alcohol (isobutanol)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Isobutyl isobutyrate	OSHA PV2090			10		200		50 min		GC-FID	ST 226-01 48
Isobutyraldehyde (Aldehydes, Screening)	NIOSH 2539			5		20		4		GC-FID & GC-MS	ST 226-118 50
Isocyanates *(see specific isocyanate)*	NIOSH 5521	varies		480	10	1000	1000	8	10	HPLC-ELCHM & HPLC-UV	IMP 225-36-1 70 IT 225-22 70
Isocyanates *(see specific isocyanate)*	NIOSH 5522	varies	varies	360	20	1000	2000	6	10	HPLC-FD	IMP 225-36-1 70 IT 225-22 70
Isocyanates *(see specific isocyanate)*	OR-OSHA 1010	varies	varies	45	5	1000	1000	45 min	5	HPLC	IMP 225-36-1 70 IT 225-22 70 CF/CST 225-9029 68
Isocyanates, total *(see specific isocyanate)*	NIOSH 5525	varies	varies	1-500	1-500	1000-2000	1000-2000	varies	varies	HPLC-UV	FLT 225-7 ‡ 108 CST 225-4 113 SP 225-27 or IOM 225-76A 120 FLT 225-702 ‡ 108
Isoflurane	OSHA 103			12		50		4		GC-FID	ST 226-81A 49
Isooctyl alcohol	OSHA PV2033	100		10		20(50)		8(3.3)		GC-FID	ST 226-01 48
Isophorone	NIOSH 2508	4		10		20(50)		8(3.3)		GC-FID	ST 226-81A 49
Isophorone	NIOSH 2556	4		2-25		10-100		varies		GC-FID	ST 226-93 50
Isophorone (3,5,5-trimethylcyclohex-2-enone)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Isophorone (3,5,5-trimethylcyclohex-2-enone)	Internal					11.3 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-104 96
Isophorone diisocyanate	OSHA 5002			60	15	1000	1000	1	15	HPLC-UV	CF/CST 225-9002 or CF/CST 225-9022▼ 68 C/HLD 225-1 114
Isophorone diisocyanate (IPDI)	OR-OSHA 1010	0.02	0.02	45	5	1000	1000	45 min	5	HPLC	IMP 225-36-1 70 IT 225-22 70 CF/CST 225-9029 68
Isophorone diisocyanate (isocyanates, total)	NIOSH 5525	45 µg/m³	180 µg/m³ (10 min) C	1-500		1000-2000		varies		HPLC-UV	FLT 225-7 ‡ 108 CST 225-4 113 SP 225-27 or IOM 225-76A 120 FLT 225-702 ‡ 108
Isopropanol (isopropyl alcohol)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Isopropanol (isopropyl alcohol)	Internal					18.4 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
Isopropanol (isopropyl alcohol)	Internal					18.4 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Isopropyl acetate	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Isopropyl acetate	NIOSH 1454			9		50		3		GC-FID	ST 226-01 48
Isopropyl acetate	NIOSH 1460			0.1-9		20-200		varies		GC-FID	ST 226-01 48
Isopropyl alcohol	OSHA 5001	200		12		4				GC-FID	ST 226-82 50
Isopropyl alcohol (Alcohols I)	NIOSH 1400	400	500	3	3	20	200	2.5	15	GC-FID	ST 226-01 48
Isopropyl alcohol (isopropanol)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Isopropyl alcohol (isopropanol)	Internal					18.4 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
Isopropyl alcohol (isopropanol)	Internal					18.4 ml/min		8-24 hrs		SE, GC	PS 690-105 96

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Isopropyl amine		5				13		8 hrs		HPLC-UV	PS 500-400 92
Isopropyl amine	OSHA PV2126	5		20		100		200 min		HPLC	ST 226-30-18 48
N-Isopropyl aniline	OSHA 78			133		1000-2000		100 min		HPLC-UV	CF/CST 225-9004 68 C/HLD 225-1 114
Isopropyl benzen (cumene)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Isopropyl Benzene (cumene)	Internal					12.8 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-104 96
Isopropyl Benzene (cumene)	Internal					12.8 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Isopropyl ether	NIOSH 1618	500		0.1-3		10-50		varies		GC-FID	ST 226-01 48
Isopropyl glycidyl ether	NIOSH 1620		50 (15 min)		3		200		15	GC-FID	ST 226-01 48
Isovaleraldehyde	ASTM D 5197			varies		500-1200		5 min-24 hrs		HPLC-UV	ST 226-120 ○ or ST 226-119 50
Isovaleraldehyde (Aldehydes, Screening)	NIOSH 2539			5		20		4		GC-FID & GC-MS	ST 226-118 50
Kaolin (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Kaolin (particulates, total)	NIOSH 0500			120		2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Kathon 886 (kathon biocide)	NON 55			50	7.5	200	500	4	15	HPLC-UV	ST 226-99 50
Kepone	NIOSH 5508	1 µg/m³		480		1000		8		GC-ECD	F/CST 225-3-01 100 IMP 225-36-1 70 IT 225-22 70
Kerosene	OSHA PV2139			20		100		200 min		GC-FID	ST 226-01 48
Kerosene (naphthas)	NIOSH 1550	100 mg/m³		10		20(50)		8(3.3)		GC-FID	ST 226-01 48
Ketones	EPA TO-5			< 80 L		100-1000 ml/min				HPLC-UV	IMP 225-36-1 70 IT 225-22 70
Ketones (screening)	NIOSH 2549			1-6		10-50		varies		TD, GC-MS	ST 226-330 52
Ketones I *(see specific compounds)*	NIOSH 1300	varies		varies		10-200		varies		GC-FID	ST 226-01 48
Ketones I *(see specific compounds)*	NIOSH 2555			varies		varies		varies		GC-FID	ST NA SKC
Ketones II *(see specific compounds)*	NIOSH 1301	varies		varies		varies		8		GC-FID	ST 226-01 48
Ketones II *(see specific ketone)*	NIOSH 2553	varies	varies	1-25	1-25	10-200	10-200	varies	varies	GC-FID	ST NA SKC
Lanthanum (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306			Varies		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Lanthanum (Elements by ICP Aqua Regia Ashing)	NIOSH 7301			5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Lanthanum (Elements by ICP $HNO_3/HClO_4$ Ashing)	NIOSH 7300			5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Lanthanum (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Lasso (aroclor)	OSHA PV2035			100		1000		100 min		HPLC-UV	F/CST 225-706 108 C/HLD 225-1 114
Lead	NIOSH 7082	< 0.1 mg/m³		720		1500		8		AAS-F	F/CST 225-3-01 100 C/HLD 225-1 114
Lead	NIOSH 7105	< 0.1 mg/m³		720		1500		8		AAS-GF	F/CST 225-3-01 100 C/HLD 225-1 114
Lead (by field portable XRF)	NIOSH 7702	< 0.1 mg/m³		960		2000		8		XRF	F/CST 225-3-01 100
Lead (by portable ultrasound extraction/ASV)	NIOSH 7701	0.05 mg/m³		20-1500		1000-4000		varies		P ASV	F/CST 225-3-01 100 C/HLD 225-1 114
Lead (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	0.05 mg/m³		4-2000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Lead (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	0.05 mg/m³		50-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Lead (Elements by ICP HNO_3 Digestion)	NIOSH 7303	0.5 mg/m³		35-100,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Lead (Elements by ICP $HNO_3/HClO_4$ Ashing)	NIOSH 7300	0.05 mg/m³		50-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Lead (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Lead (ICP analysis of metal/metalloid particulates from solder operations)	OSHA ID 206			480		2000		4		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Lead (in dust wipes)	NIOSH 9105									SPOT	W 550-001 or W 550-002 169
Lead (in surface dust)	ASTM E 1792			bulk						varies	W 225-2414 170
Lead (in surface dust)	OSHA ID 125G			wipe						ICP-AES	W 225-2414 170

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞																	
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time											
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number								
Lead (in workplace air)	ASTM D 6785			varies		varies		varies		AAS-F	IOM	225-70A	120	FLT	225-1930	100			
Lead (on surfaces)	NIOSH 9100									AA-F or AA-GF or ICP	W	225-2414	170						
Lead chromate (CR(VI))	OSHA ID 215 (V2)	0.005 mg/m³		960		2000		8		IC-UV	F/CST	225-802 Ω	105	C/HLD	225-1	114			
Lead oxide (as lead)	NIOSH 7082	< 0.1 mg/m³		720		1500		8		AAS-F	F/CST	225-3-01	100	C/HLD	225-1	114			
Lead oxide (as Pb)	NIOSH 7105	< 0.1 mg/m³		720		1500		8		AAS-GF	F/CST	225-3-01	100	C/HLD	225-1	114			
Lead oxide (by field portable XRF)	NIOSH 7702	< 0.1mg/m³		960		2000		8		XRF	F/CST	225-3-01	100						
Lead oxide (by portable ultrasound extraction/ASV)	NIOSH 7701	0.05 mg/m³		20-1500		1000-4000		varies		P ASV	F/CST	225-3-01	100	C/HLD	225-1	114			
Lead sulfide (as Pb)	NIOSH 7505	< 0.1 mg/m³		750		2500		5		XRD	F/CST CYC	225-803 225-01-02	105 125	C/HLD	225-1	114			
Lead, inorganic fumes & dusts (as Pb)	OSHA ID 121	0.05 mg/m³		960	30	2000	2000	8	15	AA or AES	F/CST F/CST C/HLD	225-508 225-3-01 225-1	or or 114	F/CST F/CST	225-802 225-8408	or 100			
Lead, inorganic fumes & dusts (as Pb)	OSHA ID 125G	0.05 mg/m³		480	30	2000	15	4		ICP-AES	F/CST F/CST C/HLD	225-3-01 225-803 225-1	or or 114	F/CST F/CST	225-3100 225-8215	or 105			
Lead, inorganic surface dusts (as Pb)	OSHA ID 121									AA or AES	W	225-24	or	W	225-2414	170			
Limestone (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT CST	225-5-37-P 225-2LF	105 113	C/HLD	225-1	114			
Limestone *(see calcium carbonate)*																			
Limestone *(see Particulates Not Otherwise Regulated, total and respirable)*																			
Limonene	OSHA PV2036			10		20(50)		8(3.3)		GC-FID	ST	226-01	48						
Limonene (terpenes)	NIOSH 1552			24		50		8		GC-FID	ST	226-01	48						
Lindane (gamma-BHC)	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54						
Linuron	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF	226-92	54						
Lithium	OSHA ID 121			960		2000		8		AA or AES	F/CST F/CST C/HLD	225-508 225-3-01 225-1	or or 114	F/CST F/CST	225-802 225-8408	or 100			
Lithium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306			Varies		1000-4000		varies		ICP-AES	SC	225-8517	101	C/HLD	225-1	114			
Lithium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301			100-2000		1000-4000		varies		ICP-AES	F/CST C/HLD	225-3-01 225-1	or 114	F/CST	225-803 ¥	105			
Lithium (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300			100-2000		1000-4000		varies		ICP-AES	F/CST	225-3-01	100	C/HLD	225-1	114			
Lithium hydride (as Li)	OSHA ID 121	0.025 mg/m³		960		2000		8		AA or AES	F/CST F/CST C/HLD	225-508 225-3-01 225-1	or or 114	F/CST F/CST	225-802 225-8408	or 100			
Lithium hydroxide (alkaline dust)	NIOSH 7401			960		2000		8		TITRA	F/CST	225-1715	106	C/HLD	225-1	114			
Lithium hydroxide (as Li)	OSHA ID 121			960		2000		8		AA or AES	F/CST F/CST C/HLD	225-508 225-3-01 225-1	or or 114	F/CST F/CST	225-802 225-8408	or 100			
Magnesite (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT CYC	225-5-37-P 225-01-02	105 125	C/HLD CST	225-1 225-3LF	114 113			
Magnesite (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT CST	225-5-37-P 225-2LF	105 113	C/HLD	225-1	114			
Magnesium	OSHA ID 121			960	30	2000	2000	8	15	AA or AES	F/CST F/CST C/HLD	225-508 225-3-01 225-1	or or 114	F/CST F/CST	225-802 225-8408	or 100			
Magnesium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306			1-330		1000-4000		varies		ICP-AES	SC	225-8517	101	C/HLD	225-1	114			
Magnesium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	10 mg/m³ (fume, as oxide)		5-67		1000-4000		varies		ICP-AES	F/CST C/HLD	225-3-01 225-1	or 114	F/CST	225-803	105			
Magnesium (Elements by ICP HNO_3 Digestion)	NIOSH 7303			1-10,000		1000-4000		varies		ICP-AES	F/CST	225-3-01	100	C/HLD	225-1	114			
Magnesium (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	10 mg/m³ (fume, as oxide)		5-67		1000-4000		varies		ICP-AES	F/CST C/HLD	225-3-01 225-1	or 114	F/CST	225-8408	100			
Magnesium oxide (as Mg, elements by ICP)	NIOSH 7303	10		5-33,000		1000-4000		varies		ICP-AES	F/CST	225-3-01	100	C/HLD	225-1	114			
Magnesium oxide fume (respirable dust)	OSHA ID 121	5 mg/m³		960		2000		8		GR & AA or GR & AES	F/CST CYC	225-3-01 225-105	100 124	C/HLD	225-1	114			

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Magnesium oxide fume (total dust)	OSHA ID 121	15 mg/m³		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Malathion	ASTM D 4861			240-7200		1000-5000		4-24		GC-NPD	PUF 226-92 54
Malathion	OSHA 62	15 mg/m³		60		1000		1		GC-FPD	ST 226-30-16 48
Malathion (Organophosphorus Pesticides)	NIOSH 5600	10 mg/m³		60		1000		1		GC-FPD	ST 226-58 49
Maleic anhydride	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Maleic anhydride	NIOSH 3512	0.25		360		1000		6		HPLC-UV	IMP 225-36-2 70 IT 225-22 70
Maleic anhydride	OSHA 86	0.25		60		500		2		HPLC-UV	CF/CST 225-9021 †† 68 C/HLD 225-1 114
Maneb	OSHA 107			500		2000		250		HPLC-UV	F/CST 225-3-01 100 C/HLD 225-1 114
Manganese & compounds (as Mn)	OSHA ID 121		5 mg/m³ (C)	960	10	2000	2000	8	5	AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Manganese & compounds (as Mn)	OSHA ID 125G		5 mg/m³		10		2000		5	ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Manganese (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	1 mg/m³	3 mg/m³	1-1000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Manganese (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	1 mg/m³	3 mg/m³	5-200	5-200	1000-4000	1000-4000	varies	varies	ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Manganese (Elements by ICP HNO_3 Digestion)	NIOSH 7303	1 mg/m³	3 mg/m³	0.05-10,000	0.05-10,000	1000-4000	1000-4000	varies	varies	ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Manganese (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	1 mg/m³	3 mg/m³	5-200	5-200	1000-4000	1000-4000	varies	varies	ICP-AES	F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Manganese (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Manganese fume	OSHA ID 125G		5 mg/m³	480	30	2000	2000	4	15	ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Manganese fume (as Mn)	OSHA ID 121		5 mg/m³ (C)	960	10	2000	2000	8	5	AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Manganese in welding fume	NON 58		5 mg/m³	varies		750		varies		GR	FLT 225-8050 100 CST 225-6201 117 C/HLD 225-6200 117
Manganese tetroxide (as Mn)	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Manganese tetroxide (as Mn)	OSHA ID 125G			480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Marble (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Marble (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Marble *(see Particulates Not Otherwise Regulated, total and respirable)*											
MDI (4,4-methylene bisphenyl isocyanate)	OSHA 47	50 µg/m³	200 µg/m³		10		1000		10	HPLC-UV	CF/CST 225-9002 or CF/CST 225-9013 68 C/HLD 225-1 114
MDI (4,4-methylenebis[phenyl isocyanate]) (isocyanates, total)	NIOSH 5525	50 µg/m³	200 µg/m³ (10 min) C	1-500		1000-2000		varies		HPLC-UV	FLT 225-7 ‡ 108 CST 225-4 113 SP 225-27 or IOM 225-76A 120 FLT 225-702 ‡ 108
MDI (4,4'-methylenebisphenyl isocyanate) (isocyanates)	NIOSH 5521	50 µg/m³	200 µg/m³ (10 min) C	480	10	1000	1000	8	10	HPLC-ELCHM & HPLC-UV	IMP 225-36-1 70 IT 225-22 70
MEK *(see methyl ethyl ketone)*											
Mercaptans *(see specific compounds)*	NIOSH 2542		0.5 (15 min)	48	12	100	200	8	60	GC-FPD	CF/CST 225-9007 68 C/HLD 225-1 114
Mercury	NIOSH 6009	0.05 mg/m³		48		200		4		AA	ST 226-17-1A 48 F/CST 225-3-01 100
Mercury (Rathje & Marcero)	NON 17			48		100		8		AA	ST 226-17-1A 48
Mercury (Rathje & Marcero)	NON 17			varies		1000-3000		varies		AA	ST 226-17-3A 48
Mercury (vapor)	OSHA ID 140	0.1 mg/m³		3-100		200		varies		AA	ST 226-17-1A 48 F/CST 225-3-01 100
Mercury, Particulate (in Workplace Atmospheres, air samples)	OSHA ID 145		0.01 mg/m³		30		2000		15	AA	F/CST 225-3-01 100 C/HLD 225-1 114

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Mercury, Particulate (in Workplace Atmospheres, wipe samples)	OSHA ID 145		0.01 mg/m³							wipe	SM TB 225-24 170
Mesityl oxide (Ketones II)	NIOSH 2553	10		1-25		10-200		varies		GC-FID	ST NA SKC
Mesityl oxide (Ketones II)	NIOSH 1301	10		10		20(50)		8(3.3)		GC-FID	ST 226-01 48
Mesitylene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Mestranol	OSHA PV2068			480		2000		4		HPLC	F/CST 225-802 105 C/HLD 225-1 114
Metal & metalloid particulates	OSHA ID 121	varies	varies	960	30	2000	2000	8	15	AA or AES	F/CST 225-508 or F/CST 225-802 or 100 F/CST 225-3-01 or F/CST 225-8408 C/HLD 225-1 114
Metal & metalloid particulates	OSHA ID 125G	varies	varies	480	30	2000	2000	4	15	ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or 105 F/CST 225-803 or F/CST 225-8215 C/HLD 225-1 114
Metal & metalloid particulates (bulk sample)	OSHA ID 125G	varies	varies	bulk	bulk					ICP-AES	SM TB 225-24 170
Metal removal fluid (aerosol)	ASTM D 7049			960		2000		8		GR	FLT 225-17-33 106 CST 225-2LF 113 C/HLD 225-1 114 SP 225-27 115
Metal working fluids (aerosols)	ASTM D 7049			960		2000		8		GR	FLT 225-17-33 106 CST 225-2LF 113 C/HLD 225-1 114 SP 225-27 115
Metals (ICP analysis of metal/metalloid particulates from solder operations) (bulk sample)	OSHA ID 206	varies	varies	bulk	bulk					ICP-AES	SM TB 225-24 170
Metals (in settled dust)	ASTM D 6966			wipe		wipe		wipe		varies	W 225-2414 170 TMP 225-2415 170
Metals in workplace atmospheres	ASTM D 4185			varies		2000		varies		AAS	F/CST 225-3-01 100 C/HLD 225-1 114
Metals, trace (Elements by ICP $HNO_3/HClO_4$ Ashing)	NIOSH 7300	varies	varies	varies	varies	1000-4000	1000-4000	varies	varies	ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Metalworking fluids (thoracic particulates)	NIOSH 5524 ●	0.4 mg/m³ (thoracic particulates)		2000		varies		varies		GR	PPI 225-381 128 FLT 225-17-33 106 IS 225-388 126 SP 225-27 or SCN 225-26 115
Metalworking fluids (total particulates)	NIOSH 5524 ●	0.5 mg/m³ (total particulates)		1000 (min)		2000		varies		GR	FLT 225-17-33 106 CST 225-2LF 113 C/HLD 225-1 114 SP 225-27 115
Methacrylic acid	OSHA PV2005	20		20		100		4		LC-UV	ST 226-30-08 48
Methacrylic acid	NON 60			24		100		4		HPLC-UV	ST 226-30-08 48
Methamidophos (Organophosphorus Pesticides)	NIOSH 5600			240		1000		4		GC-FPD	ST 226-58 49
Methanol (methyl alcohol)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Methanol (methyl alcohol)	NIOSH 2000	200	250	1(@200ppm) -5	3	20	200	4	15	GC-FID	ST 226-51 49
Methidathion	OSHA PV2074			60		1000		1		GC-ECD	ST 226-58 49
Methiocarb (Organonitrogen Pesticides)	NIOSH 5601			240		1000		4		HPLC-UV	ST 226-58 or ST 226-30-16 48
Methomyl	OSHA PV2114			60		1000		1		HPLC-UV	ST 226-30-16 48
Methomyl (Organonitrogen Pesticides)	NIOSH 5601	2.5 mg/m³		240		1000		4		HPLC-UV	ST 226-58 or ST 226-30-16 48
Methotrexate	OSHA PV2146			120		1000		2		HPLC-UV	ST 226-30-16 48
2-Methoxy-1-propanol	OSHA 99			10		100		100 min		GC-FID	ST 226-01 48
2-Methoxy-1-propyl acetate	OSHA 99			10		100		100 min		GC-FID	ST 226-01 48
1-Methoxy-2-propanol	OSHA 99			10		100		100 min		GC-FID	ST 226-01 48
1-Methoxy-2-propanol (glycol ethers)	NIOSH 2554			3-25		100-200		varies		GC-FID	ST 226-81A 49
1-Methoxy-2-propyl acetate	OSHA 99			10		100		100 min		GC-FID	ST 226-01 48
1-Methoxy-2-propyl acetate (glycol ethers)	NIOSH 2554			3-25		100-200		varies		GC-FID	ST 226-81A 49
Methoxychlor	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Methoxychlor	OSHA PV2038	15 mg/m³		60		1000		1		GC-ECD	ST 226-30-16 48
2-Methoxyethanol	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
2-Methoxyethanol (methyl CELLOSOLVE solvent) (alcohols IV)	NIOSH 1403	0.1 (skin)		6-50		10-50		varies		GC-FID	ST 226-01 48
2-Methoxyethyl acetate	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
2-Methoxyethyl acetate	OSHA 53	25		10		100		100 min		GC-FID	ST 226-01 48
2-Methoxyphenol	OSHA PV2039			20		200		100 min		GC-FID	ST 226-95 50

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞																	
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time											
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number								
3-Methoxyphenol	OSHA PV2039			20		200		100 min		GC-FID	ST	226-95	50						
4-Methoxyphenol	OSHA PV2039			20		200		100 min		GC-FID	ST	226-95	50						
Methoxypropanol	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
Methyl acetate	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
Methyl acetate	NIOSH 1458	200	250	5	3	20	200	4	15	GC-FID	ST	226-01	48						
Methyl acrylate	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
Methyl acrylate	Internal					15.7 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-103	96			
Methyl acrylate	Internal					15.7 ml/min		8-24 hrs		SE, GC	PS	690-105	96						
Methyl acrylate	NIOSH 1459	10		5		20		4		GC-FID	ST	226-01	48						
Methyl acrylate	NIOSH 2552	10		1-5		10-200		varies		GC-FID	ST	NA SKC							
Methyl acrylate	NON 54	5	15	10	3	20	200	8	15	GC-FID	ST	226-81A	49						
Methyl acrylate	OSHA 92	10		12		50		4		GC-FID	ST	226-73	49						
Methyl acrylonitrile	OSHA 37			20		200		100 min		GC-NPD	ST	226-01	48						
Methyl alcohol (methanol)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
Methyl alcohol (methanol)	NIOSH 2000	200	250	1(@200ppm) -5	3	20	200	4	15	GC-FID	ST	226-51	49						
Methyl alcohol (RH < 50% @ 25 C)	OSHA 5001	200		3		50		1		GC-FID	ST	226-82	50						
Methyl alcohol (RH > 50% @ 25 C)	OSHA 5001	200		5		50		100 min		GC-FID	ST	226-82	50						
Methyl amine		10				18		8 hrs		HPLC-UV	PS	500-400	92						
Methyl amine	OSHA 40	10		10		20		8		HPLC-UV	ST	226-96	50						
Methyl arsonic acid (arsenic, organo-)	NIOSH 5022			480		1000		8		IC-AA	FLT C/HLD	225-17-01 225-1	106 114	CST	225-2LF	113			
Methyl bromide	NIOSH 2520	LFC		1-5		10-100		varies		GC-AED	ST	226-82	50	ST	226-44-02	49			
Methyl bromide	OSHA PV2040		20		3		200		15	GC-FID	ST	226-82	50						
Methyl butyl ketone (Ketones I)	NIOSH 2555			1-10		10-200		varies		GC-FID	ST	NA SKC							
Methyl butyl ketone (MBK, 2-hexanone)	Internal					14.3 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-103	96			
Methyl butyl ketone (MBK, 2-hexanone)	Internal					14.3 ml/min		8-24 hrs		SE, GC	PS	690-105	96						
Methyl butyl ketone (MBK, 2-hexanone) (Ketones I)	NIOSH 1300	1		10		20(50)		8(3.3)		GC-FID	ST	226-01	48						
Methyl CELLOSOLVE acetate (2-methoxyethyl acetate)	NIOSH 1451	0.1		12		50		4		GC-FID	ST	226-01	48						
Methyl CELLOSOLVE solvent (2-methoxyethanol) (alcohols IV)	NIOSH 1403	0.1 (skin)		6-50		10-50		varies		GC-FID	ST	226-01	48						
Methyl chloride	NIOSH 1001	LFC			0.5		100		5	GC-FID	ST	226-09	48	ST	226-01	48			
Methyl chloroform (1,1,1-Trichloroethane)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
Methyl chloroform (1,1,1-Trichloroethane)	Internal					14.1 ml/min		8-24 hrs		SE, GC	PS	690-105	96						
Methyl chloroform (1,1,1-trichloroethane)	OSHA 14	350		3	3	20	200	2.5	15	GC-FID	ST	226-01	48						
Methyl chloroform (1,1,1-trichloroethane) (hydrocarbons, halogenated)	NIOSH 1003		350		3		10-200		varies	GC-FID	ST	226-01	48						
Methyl cyclohexane	Internal					14.2 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-103	96			
Methyl cyclohexane	Internal					14.2 ml/min		8-24 hrs		SE, GC	PS	690-105	96						
Methyl cyclohexane (hydrocarbons, BP 36 to 216 C)	NIOSH 1500	400		4		10-200		varies		GC-FID	ST	226-01	48						
Methyl ethyl ketone	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
Methyl ethyl ketone	Internal					16.9 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-103	96			
Methyl ethyl ketone	Internal					16.9 ml/min		8-24 hrs		SE, GC	PS	690-105	96						
Methyl ethyl ketone	OSHA 1004	200		12		50		4		GC-FID	ST	NA SKC							
Methyl ethyl ketone (Ketones I)	NIOSH 2555			1-10		10-200		varies		GC-FID	ST	NA SKC							
Methyl ethyl ketone (MEK) *(see 2-butanone)*																			
Methyl ethyl ketone (MEK) *(see 2-butanone)*	NIOSH 2500	200	300	10	3	20(50)	200	8(3.3)	15	GC-FID	ST	226-81A	49						

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Methyl ethyl ketone (MEK, 2-butanone)	OSHA 1004	200				16.88		8		GC-FID	PS 575-002 82
Methyl ethyl ketone peroxide	NIOSH 3508		0.2 (15 min)		120		1000		120	VAS	IMP 225-36-1 70 IT 225-22 70
Methyl ethyl ketone peroxide	OSHA 77				15		1000		15	HPLC-UV	ST 226-93 50
Methyl formate	OSHA PV2041	100		3		50		1		GC-FID	ST 226-83 50
Methyl iodide	NIOSH 1014	2		48		100		8		GC-FID	ST 226-01 48
Methyl isoamyl acetate (Esters I)	NIOSH 1450	50		1-10		10-200		varies		GC-FID	ST 226-01 48
Methyl isoamyl ketone	OSHA PV2042	100		24		50		8		GC-FID	ST 226-01 48
Methyl isobutyl carbinol (methyl amyl alcohol) (alcohols combined)	NIOSH 1405	25	40 (skin)	1-10	1-10	10-200	10-200	varies	varies	GC-FID	ST 226-01 48
Methyl isobutyl carbinol (methyl amyl alcohol) (Alcohols III)	NIOSH 1402	25	40	10	3	20(50)	200	8(3.3)	15	GC-FID	ST 226-01 48
Methyl isobutyl ketone	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
Methyl isobutyl ketone	Internal					13.5 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
Methyl isobutyl ketone	Internal					13.5 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Methyl isobutyl ketone	OSHA 1004	100		12		50		4		GC-FID	ST NA SKC
Methyl isobutyl ketone (hexone)	OSHA 1004	100				13.62		8		GC-FID	PS 575-002 82
Methyl isobutyl ketone (hexone) (Ketones I)	NIOSH 1300	50	75	10	3	20(50)	200	8(3.3)	15	GC-FID	ST 226-01 48
Methyl isobutyl ketone (Ketones I)	NIOSH 2555	50		1-10		10-200		varies		GC-FID	ST NA SKC
Methyl isocyanate (MIC)	OSHA 54	0.02		15		50		5		HPLC-FD	ST NA SKC
Methyl mercaptan	NIOSH 2542		0.5 (15 min)	48	12	100	200	8	60	GC-FPD	CF/CST 225-9007 68 C/HLD 225-1 114
Methyl mercaptan	NON 42			12		1000		12 min		GC-FPD	SB 231-10 60
Methyl mercaptan	OSHA 26		10	20		200		100 min		GC-FPD	CF/CST 225-9007 68 C/HLD 225-1 114
Methyl methacrylate	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
Methyl methacrylate	Internal					13.1 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
Methyl methacrylate	Internal					13.1 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Methyl methacrylate	NIOSH 2537	100		1-8		10-50		varies		GC-FID	ST 226-30-06 48
Methyl methacrylate	NON 54	50	75	10	3	20	200	8	15	GC-FID	ST 226-81A 49
Methyl methacrylate	OSHA 94	100		3		50		1		GC-FID	ST 226-73 49
Methyl n-amyl ketone (2-heptanone) (Ketones II)	NIOSH 2553	100		1-25		10-200		varies		GC-FID	ST NA SKC
Methyl parathion	ASTM D 4861			240-7200		1000-5000		4-24		GC-NPD	PUF 226-92 54
Methyl parathion	OSHA PV2112			480		1000		8		GC-FPD	ST 226-30-16 48
Methyl parathion (Organophosphorus Pesticides)	NIOSH 5600	0.2 mg/m^3		240		1000		4		GC-FPD	ST 226-58 49
Methyl propyl ketone (2-pentanone)	NIOSH 1300	150		10		200		50 (min)	15	GC-FID	ST 226-01 48
Methyl propyl ketone (Ketones I)	NIOSH 2555			1-10		10-200		varies		GC-FID	ST NA SKC
alpha-Methyl styrene	Internal					12.6 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-104 96
alpha-Methyl styrene	Internal					12.6 ml/min		8-24 hrs		SE, GC	PS 690-105 96
alpha-Methyl styrene (Hydrocarbons, Aromatic)	NIOSH 1501	50	100	1-30	1-30	10-200	10-200	varies	varies	GC-FID	ST 226-01 48
beta-Methyl styrene (Hydrocarbons, Aromatic)	NIOSH 1501	50	100	1-30	1-30	10-200	10-200	varies	varies	GC-FID	ST 226-01 48
Methyl styrene (vinyl toluene)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
17-a-Methyl testosterone	OSHA PV2001			240		1000		4		HPLC-UV	F/CST 225-706 108 C/HLD 225-1 114
Methyl-2-cyanoacrylate	OSHA 55			12		100		2		HPLC-UV	ST 226-98 50
1-Methyl-2-ethyl benzene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
1-Methyl-2-pyrrolidinone	OSHA PV2043			10		200		50 min		GC-FID	ST 226-01 48
N-Methyl-2-pyrrolidinone	NIOSH 1302			96		200		8		GC-NPD, FID	ST 226-01 48
N-Methyl-2-pyrrolidinone	OSHA PV2043			10		200		50 min		GC-FID	ST 226-01 48
1-Methyl-3-ethyl benzene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
5-Methyl-3-heptanone (ketones II)	NIOSH 2553	25		1-25		10-200		varies		GC-FID	ST NA SKC

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞									
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time			
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
5-Methyl-3-heptanone (ketones II)	NIOSH 1301	25		10		20(50)		8(3.3)		GC-FID	ST 226-01 48
1-Methyl-4-ethyl benzene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
2-Methyl-4-isothiazolin-3-one (Kathon 886)	NON 55	1.5 mg/m³	4.5 mg/m³	50	7.5	200	500	4	15	HPLC-UV	ST 226-99 50
Methylal (dimethoxymethane)	NIOSH 1611	1000		1.8		20		1.5		GC-FID	ST 226-01 48
Methylal *(see dimethoxymethane)*											
Methylcyclohexanol	NIOSH 1404	50		12		25		8		GC-FID	ST 226-01 48
Methylcyclohexanone	NIOSH 2521	50	75	3		50		1		GC-FID	ST 226-115 50
4,4-Methylene bisphenyl isocyanate (MDI)	OSHA 5002		200 µg/m³		15		1000		15	HPLC-UV	CF/CST 225-9002 or CF/CST 225-9022▼ 68 CF/CST 225-9013 or C/HLD 225-1 114
4,4-Methylene bisphenyl isocyanate (MDI) (isocyanates)	NIOSH 5521	50 µg/m³	200 µg/m³ (10 min) C	480	10	1000	1000	8	10	HPLC-ELCHM & HPLC-UV	IMP 225-36-1 70 IT 225-22 70
4,4-Methylene bisphenyl isocyanate (MDI) (isocyanates)	OR-OSHA 1010	0.02	0.005	45	5	1000	1000	45 min	5	HPLC	IMP 225-36-1 70 IT 225-22 70 CF/CST 225-9029 68
Methylene chloride	NIOSH 1005	LFC		2	1.5	20	100	1.6	15	GC-FID	ST 226-01 48
Methylene chloride	OSHA 80	25	125	3	0.25	50	50	1	5	GC-FID	ST NA SKC
Methylene chloride (dichloromethane)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Methylene chloride (dichloromethane)	Internal					0.54 ml/min		1-7 days		SE, GC	PS 690-105 with RR 690-300 96
Methylene chloride (dichloromethane)	Internal					14.7 ml/min		8 hrs-3 days		SE, GC	PS 690-105 96
4,4-Methylene diphenyl isocyanate (MDI)	NIOSH 5522	50 µg/m³	200 µg/m³ (10 min) C	360	20	1000	2000	6	10	HPLC-FD	IMP 225-36-1 70 IT 225-22 70
4,4'-Methylenebis(2-chloroaniline) (MOCA)	OSHA 71			100		1000		100 min		GC-ECD	CF/CST 225-9004 68 C/HLD 225-1 114
Methylene-bis-(4-cyclohexylisocyanate)	OSHA 5002				15		1000		15	HPLC-UV	CF/CST 225-9013 or C/HLD 225-1 114 CF/CST 225-9022▼ 68
Methylene-bis-(4-cyclohexylisocyanate) (isocyanates, total)	NIOSH 5525		110 µg/m³ (10 min) C		1-500		1000-2000		varies	HPLC-UV	FLT 225-7 ‡ 108 CST 225-4 113 SP 225-27 or IOM 225-76A 120 FLT 225-702 ‡ 108
4,4-Methylenebisphenyl isocyanate (MDI) (isocyanates, total)	NIOSH 5525	50 µg/m³	200 µg/m³ (10 min) C	1-500		1000-2000		varies		HPLC-UV	FLT 225-7 ‡ 108 CST 225-4 113 SP 225-27 or IOM 225-76A 120 FLT 225-702 ‡ 108
4,4'-Methylenedianiline (MDA)	NIOSH 5029	LFC		480		1000		8		HPLC-UV	CF/CST 225-9004 68 C/HLD 225-1 114
4,4'-Methylenedianiline (MDA)	OSHA 57			100		1000		100		GC-ECD	CF/CST 225-9004 68 C/HLD 225-1 114
Methyl-n-amyl ketone (2-heptanone) (Ketones II)	NIOSH 1301	100		1-25		10-200		8		GC-FID	ST 226-01 48
Methylphenols	EPA TO-8			< 80 L		100-1000 ml/min				HPLC-UV	IMP 225-36-1 70 IT 225-22 70
Methyl-t-butyl-ether (MTBE)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Methyl-t-butyl-ether (MTBE)	Internal					13.6 ml/min		8 hrs-30 days		SE, GC	PS 690-105 96
Methyl-tert-butyl ether	NIOSH 1615			96		200		8		GC-FID	ST 226-37 49
Methyltetrahydrophthalic anhydride	NON 28			200	20	40	1000	8	20	GC-FID	ST 226-30 48
Methyltin dichloride	NIOSH 5526	0.1 mg/m³		15-75		250-1000		0.2-5	60	GC-FPD	ST 226-30-16 48
Metolachlor	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Metolachlor	NIOSH 5602			480		1000		8		GC-ECD	ST 226-58 49
Metribuzin	OSHA PV2044			240		1000		4		GC-FPD	ST 226-30-16 48
Mevinphos (phosdrin) (Organophosphorus Pesticides)	NIOSH 5600	0.01		240		1000		4		GC-FPD	ST 226-58 49
Mexacarbate	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
MIBK *(see methyl isobutyl ketone)*											
MIC (methyl isocyanate)	OSHA 54	0.02		15		50		5		HPLC-FD	ST NA SKC
Mica *(see Respirable dust)*	OSHA ID 142 (v4)										
Mineral spirits (naphthas)	NIOSH 1550	350 mg/m³	1800 mg/m³	3	1	20	200	2.5	5	GC-FID	ST 226-01 48
Methyl tin mercaptide (MTM)	OSHA ID 219SG	0.1 mg/m³		150		1000		150 mins		AA, GF	IMP 225-36-1 70 TH 225-20-01 70

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞																	
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time											
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number								
Mineral wool fiber (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT CYC	225-5-37-P 225-01-02	105 125	C/HLD CST	225-1 225-3LF	114 113			
Mineral wool fiber (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT CST	225-5-37-P 225-2LF	105 113	C/HLD	225-1	114			
Mirex	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54						
Mold spores (in air)					15-150		15000		1-10 min	varies	STC	225-9820	112						
Molybdenum (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306			1-330		1000-4000		varies		ICP-AES	SC	225-8517	101	C/HLD	225-1	114			
Molybdenum (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	5 mg/m³ (soluble) 10 mg/m³ (insoluble)		5-67		1000-4000		varies		ICP-AES	F/CST C/HLD	225-3-01 225-1	or 114	F/CST	225-803	105			
Molybdenum (Elements by ICP HNO_3 Digestion)	NIOSH 7303	5 mg/m³ (soluble) 10 mg/m³ (insoluble)		0.5-10,000		1000-4000		varies		ICP-AES	F/CST	225-3-01	100	C/HLD	225-1	114			
Molybdenum (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	5 mg/m³ (soluble) 10 mg/m³ (insoluble)		6-67		1000-4000		varies		ICP-AES	F/CST	225-3-01	100	C/HLD	225-1	114			
Molybdenum (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W	225-2414	170	TMP	225-2415	170			
Molybdenum insolubles (as Mo)	OSHA ID 125G	15 mg/m³		480		2000		4		ICP-AES	F/CST F/CST C/HLD	225-3-01 225-803 225-1	or or 114	F/CST F/CST	225-3100 225-8215	or 105			
Molybdenum insolubles (as Mo) (respirable fraction)	OSHA ID 121	15 mg/m³ (total dust)		960		2000		8		GR & AA or GR & AES	F/CST CYC	225-3-01 225-105	100 124	C/HLD	225-1	114			
Molybdenum solubles (as Mo)	OSHA ID 121	5 mg/m³		960		2000		8		AA or AES	F/CST F/CST C/HLD	225-508 225-3-01 225-1	or or 114	F/CST F/CST	225-802 225-8408	or 100			
Monochloroacetic acid (chloroacetic acid)	NIOSH 2008			48		100		8		IC-CD	ST	226-47-01	49						
Monochlorotoluene (1-chloro-2-methyl benzene; OXSOL 10)	Internal					13.0 ml/min		8-24 hrs		TD, GC	PS PS	690-101 690-104	or 96	PS	690-103	or			
Monochlorotoluene (1-chloro-2-methyl benzene; OXSOL 10)	Internal					13.0 ml/min		8-24 hrs		SE, GC	PS	690-105	96						
Monocrotophos (Azodrin)	OSHA PV2045			480		1000		8		GC-FPD	ST	226-30-16	48						
Monocrotophos (Organophosphorus Pesticides)	NIOSH 5600	0.25 mg/m³		240		1000		4		GC-FPD	ST	226-58	49						
Monoethanolamine (2-aminoethanol)	NIOSH 3509	3	6	240		1000		4		IC	IMP	225-36-1	70	IT	225-22	70			
Monoethanolamine *(see 2-aminoethanol)*																			
Monomethyl aniline	NIOSH 3511	0.5		100		1000		100 min		GC-FID	IMP	225-36-2	70	IT	225-22	70			
Monomethyl hydrazine	NIOSH 3510		0.04 (120 min)		15		1000		15	VAS	IMP	225-36-2	70	IT	225-22	70			
Monomethyl hydrazine	OSHA 20		0.2		4.5		300		15	HPLC-UV	ST	226-42-02	49						
Monuron	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF	226-92	54						
Morpholine	OSHA PV2123	20		10		100		100 min		GC-FID	ST	226-98	50						
Mycobacteria	NIOSH 0801			50-300		28300		varies		GC-FID	BI	225-9611	134						
Mycobacterium tuberculosis (airborne)	NIOSH 0900			1920		4000		8		PCR	FLT CST	225-17-32 225-3LF	106 113	SP C/HLD	225-27 225-1	115 114			
Mycotoxins (fungi in air)	NON 48			62.5-375		12,500 +		5-30		varies	BS	225-9595	136	VT	225-9598A	136			
Naphtha (coal tar)	NIOSH 1550	100		10		20(50)		8(3.3)		GC-FID	ST	226-01	48						
Naphtha (coal tar)	OSHA 48	100		3		200		15 min		GC-FID	ST	226-01	48						
Naphthalene	OSHA 35	10		10	3	20(50)	200	8(3.3)	15	GC-FID	ST	226-110	50						
Naphthalene (Naphthene, naphthalin) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m³ (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST	226-57	49						
Naphthalene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m³ (max)		225 L/min		1-24		GC-MS	PUF	226-131	55	FLT	225-1808	107			
Naphthalene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Naphthalene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506	10	15	480		2000		4		HPLC-UV	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
1,5-Naphthalene diisocyanate	OSHA PV2046			60		1000		1		HPLC-UV-FD	CF/CST	225-9013	68	C/HLD	225-1	114			

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
1,5-Naphthalene diisocyanate (isocyanates, total)	NIOSH 5525	40 µg/m³	70 µg/m³ (10 min) C	1-500	1-500	1000-2000	1000-2000	varies	varies	HPLC-UV	FLT 225-7 ‡ 108 CST 225-4 113 SP 225-27 or IOM 225-76A 120 FLT 225-702 ‡ 108
Naphthas *(see specific compounds)*	NIOSH 1550	varies		varies		varies		8		GC-FID	ST 226-01 48
alpha-Naphthylamine	OSHA 93			100		1000		100 min		GC-ECD	CF/CST 225-9004 68 C/HLD 225-1 114
beta-Naphthylamine	OSHA 93			100		1000		100 min		GC-ECD	CF/CST 225-9004 68 C/HLD 225-1 114
Naphthylamines (alpha- & beta-)	NIOSH 5518			96		200		8		GC-FID	FLT 225-16 108 CST 225-32 114 ST 226-51 49
Naphthylene diisocyanate (NDI) (isocyanates)	NIOSH 5521	40 µg/m³	70 µg/m³ (10 min) C	480	10	1000	1000	8	10	HPLC-ELCHM & HPLC-UV	IMP 225-36-1 70 IT 225-22 70
Naphthylthiourea *(see ANTU)*											
Nickel (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	0.015 mg/m³		2-2000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Nickel (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	0.015 mg/m³		5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 105 C/HLD 225-1 114
Nickel (Elements by ICP HNO_3 Digestion)	NIOSH 7303	0.012 mg/m³		1-50,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Nickel (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	0.15 mg/m³		5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Nickel (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Nickel (metal & insoluble compounds as Ni)	OSHA ID 125G	1 mg/m³		480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Nickel (metal, soluble, & insoluble compounds as Ni)	OSHA ID 121	1 mg/m³		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Nickel (soluble compounds as Ni)	OSHA ID 121	1 mg/m³		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Nickel (soluble compounds as Ni)	OSHA ID 125G	1 mg/m³		480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Nickel carbonyl	NIOSH 6007	0.001		72		150		8		AA-GF	ST NA SKC F/CST 225-3-01 100
Nicotine	NIOSH 2544	0.5 mg/m³		360		1000		6		GC-NPD	ST 226-30-04 48
Nicotine	NIOSH 2551	0.5 mg/m³		480		1000		8		GC-NPD	ST 226-93 50
Nicotine	NON 19			120		1000		2		GC	ST 226-93 50
Nicotine	NON 49			90-720		1500		1- 8		GC-NSD	ST 226-170 51
Nicotine & 3-ethenylpyridine	ASTM D 5075			varies		1500		varies		GC-NPD	ST 226-93 50
Niobium (Elements by ICP HNO_3 Digestion)	NIOSH 7303	0.012 mg/m³		0.1-3,300		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Nitric acid	NIOSH 7907	2	4	600	30	2000	2000	5	15	IC-CD	CF/CST 225-9032 68 C/HLD 225-1 114
Nitric acid	OSHA ID 165SG	2		96	7.5	200	500	8	15	IC	ST 226-10-03 48
Nitric oxide	NON 59	25		3-24		100		4		IC	ST 226-40A 49
p-Nitroaniline	NIOSH 5033	3 mg/m³		240		1000		4		HPLC-UV	F/CST 225-3-01 100 C/HLD 225-1 114
Nitrobenzene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Nitrobenzene	NIOSH 2005	1		48		100		8		GC-FID	ST 226-10 48
Nitrobenzene	NIOSH 2017	1		24		200		2		GC-FID	CF/CST 225-9004 68 ST 226-15 48
p-Nitrochlorobenzene (nitrobenzenes)	NIOSH 2005	0.1		96		200		8		GC-FID	ST 226-10 48
Nitrochloroform	NON 51	0.1		144		100		24		GC-MSD	ST 226-175 51
Nitrochloromethane	NON 51	0.1		144		100		24		GC-MSD	ST 226-175 51
4-Nitrodiphenyl	OSHA PV2082			240		500		8		GC-FID	ST 226-30-16 48
Nitroethane	NIOSH 2526	100		2.4		20		2		GC-FID	ST 226-3002A 48
Nitrofurazone	OSHA PV2069			240		1000		4		HPLC-UV	F/CST 225-709 108 C/HLD 225-1 114
Nitrogen dioxide	NIOSH 6014		1 (NO_2)	1.5-6		25-200		varies		VAS	ST 226-40-02 49
Nitrogen dioxide	OSHA ID 182		5 (C)		3		200		15	IC	ST 226-40-02 49
Nitroglycerin	NIOSH 2507		0.1 mg/m³		3		200		15	GC-ECD	ST 226-35-03 48

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Nitroglycerin	OSHA 43		0.1 mg/m³		15		1000		15	HPLC	ST 226-35-03 48
Nitromethane	NIOSH 2527			2.4		20		2		GC-NSD	ST 226-111A 50
1-Nitropropane	OSHA 46	25		3		100		30 min		GC-FID	ST 226-93 50
2-Nitropropane	NIOSH 2528	LFC		2		20		1.5		GC-FID	ST 226-110 50
2-Nitropropane	OSHA 46	25		3		100		30 min		GC-FID	ST 226-93 50
1-Nitropyrene in diesel particulates	NIOSH 2560			480-960		1000-2000		varies		GC-NCD	FLT 225-7 108 SP 225-27 115 SPC 225-23 115
N-Nitrosodiethanolamine	OSHA 31			480		2000		4		GC-TEA	F/CST 225-706 108 C/HLD 225-1 114
N-Nitrosodiphenylamine	OSHA 23			240		1000		4		HPLC-UV	IMP 225-36-2 70 IT 225-22 70
m-Nitrotoluene (nitroaromatic compounds)	NIOSH 2005	2 ppm		96		200		8		GC-FID	ST 226-10 48
o-Nitrotoluene (nitroaromatic compounds)	NIOSH 2005	2 ppm		96		200		8		GC-FID	ST 226-10 48
p-Nitrotoluene (nitroaromatic compounds)	NIOSH 2005	2 ppm		96		200		8		GC-FID	ST 226-10 48
Nitrotoluene (nitrobenzenes)	NIOSH 2005	2 ppm		96		200		8		GC-FID	ST 226-10 48
Nitrous oxide	NIOSH 6600	25		3		100-4000		varies		P IR	SB 231-05 60
trans-Nonachlor	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Nonane	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Nonane	Internal					10.6 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-104 96
Nonane	Internal					10.6 ml/min		8-24 hrs		SE, GC	PS 690-105 96
n-Nonane (hydrocarbons, BP 36 to 216 C)	NIOSH 1500	200		4		10-200		varies		GC-FID	ST 226-01 48
Nonpolar organic compounds	NON 38	varies		varies				varies		GC	PUF 226-129 55
Norethindrone	OSHA PV2070			480		2000		4		HPLC-UV	F/CST 225-802 105 C/HLD 225-1 114
Nuisance dust (Particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Nuisance dust *(see dust, respirable nuisance)*											
n-Octane	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
n-Octane	Internal					12.7 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-104 96
n-Octane	Internal					12.7 ml/min		8-24 hrs		SE, GC	PS 690-105 96
n-Octane	OSHA 5000	500		12		50		4		GC-FID	ST 226-01 48
n-Octane (hydrocarbons, BP 36 to 216 C)	NIOSH 1500	75	385	4	4	0-200	0-200	varies	varies	GC-FID	ST 226-01 48
1-Octanethiol	NIOSH 2510		0.5 (15 min)		3		200		15	GC-FPDS	ST 226-35-03 48
Octanol	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Octyl alcohol	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
di-n-Octyl phthalate (DNOP)	OSHA 104			240		1000		4		GC-FID	ST 226-56 49
Oil mist (mineral)	NIOSH 5026	5 mg/m³	10 mg/m³	480	30	1000	2000	8	15	IR	F/CST 225-3-01 or F/CST 225-802 105 C/HLD 225-1 114
Oil mist (mineral)	OSHA ID 178SG	5 mg/m³		960		2000		8		GR & IR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Oil mist (total aerosol)	NON 46	5 mg/m³		varies		2000		varies		GR	IOM 225-70A 120 FLT 225-5-25 105
Oil mist (vegetable) *(see Particulates Not Otherwise Regulated, total and respirable)*											
Organic vapors (charcoal tube method)	ASTM D 3686			varies	varies	varies	varies	varies	varies	GC	ST 226-01 48
Organic vapors (diffusive sampler method)	ASTM D 4597			varies	varies	varies	varies	varies	varies	GC	PS 575-001 or PS 575-002 82
Organonitrogen pesticides *(see specific compounds)*	NIOSH 5601			240		1000		4		HPLC-UV	ST 226-58 or ST 226-30-16 48
Organophosphorus pesticides *(see specific compounds)*	NIOSH 5600	varies		varies		varies		8		GC-FPD	ST 226-58 49
Organotin compounds as Sn *(see specific compounds)*	NIOSH 5504	0.1 mg/m³		480		1000		8		HPLC & AA-GF	ST 226-30 48 F/CST 225-709 108 C/HLD 225-1 114
Organotin compounds as Sn *(see specific compounds)*	NIOSH 5526	0.1 mg/m³		15-75		250-1000		0.25-5		GC-FPD	ST 226-30-16 48
Oxalic acid	OSHA PV2115	1 mg/m³		100		1000		100 min		IC	FLT 225-701 108 CST 225-3LF 113 C/HLD 225-1 114

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞																	
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time											
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number								
Oxamyl (Organonitrogen Pesticides)	NIOSH 5601			240		1000		4		HPLC-UV	ST	226-58	or	ST	226-30-16	48			
Oxychlordane	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54						
Ozone	OSHA ID 214	0.1		90-120	22.5	250-500	1500	180 min at 500 ml/min 480 min at 250 ml/min		IC	CF/CST	225-9014	68						
PAHs (Polynuclear Aromatic Hydrocarbons by GC, *see specific compounds*)	NIOSH 5515			480		2000		4		GC-FID	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
PAHs (Polynuclear Aromatic Hydrocarbons by GC-MS, *see specific compounds*)	ASTM D 6209			350 m^3 (max)		225 L/min		1-24		GC-MS	PUF	226-131	55	FLT	225-1808	107			
PAHs (Polynuclear Aromatic Hydrocarbons by HPLC, *see specific compounds*)	NIOSH 5506			480		2000		4		HPLC-UV	F/CST C/HLD	225-1713 225-1	106 114	ST	226-30-04	48			
Palladium (Elements by ICP HNO_3 Digestion)	NIOSH 7303			0.1-3300		1000-4000		varies		ICP-AES	F/CST	225-3-01	100	C/HLD	225-1	114			
Paper fiber (cellulose) (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT CYC	225-5-37-P 225-01-02	105 125	C/HLD CST	225-1 225-3LF	114 113			
Paper fiber (cellulose) (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT CST	225-5-37-P 225-2LF	105 113	C/HLD	225-1	114			
Paraffin wax fume	OSHA PV2047			100		1000		100 min		GC-FID	F/CST	225-706	108	C/HLD	225-1	114			
Paraquat	NIOSH 5003	0.1 mg/m^3		480		1000		8		HPLC-UV	FLT C/HLD	225-17-01 225-1	106 114	CST	225-2LF	113			
Parathion	OSHA 62	0.1 mg/m^3		480		1000		8		GC-FPD	ST	226-30-16	48						
Parathion (Organophosphorus Pesticides)	NIOSH 5600	0.05 mg/m^3		240		1000		4		GC-FPD	ST	226-58	49						
Particulates not otherwise regulated (total dust)	OSHA PV2121	15 mg/m^3		960		2000		4-8		GR	FLT	225-802	105	C/HLD	225-1	114			
Particulates not otherwise regulated, respirable	NIOSH 0600			375		2500		2.5		GR	FLT CYC	225-5-37-P 225-01-02	105 125	C/HLD CST	225-1 225-3LF	114 113			
Particulates not otherwise regulated, respirable fraction	OSHA PV2121	5 mg/m^3		varies		varies		varies		GR	FLT CYC	225-803 225-105	105 124	C/HLD	225-1	114			
Particulates, inorganic (bioaerosols)					15-150		15000		1-10 min	varies	STC	225-9820	112						
Particulates, respirable	NIOSH 0600			375		2500		2.5		GR	FLT CYC	225-5-37-P 225-01-02	105 125	C/HLD CST	225-1 225-3LF	114 113			
Particulates, total *(see specific compounds)*	NIOSH 0500			133		1000-2000		1		GR	FLT CST	225-5-37-P 225-2LF	105 113	C/HLD	225-1	114			
Particulates, total *(see specific compounds)*	NIOSH 0501			120		2000		1		GR	AC CST	225-8516GLA 225-2LF	104 113	C/HLD	225-1	114			
PCBs (42% Cl) *(see polychlorobiphenyls)*	NIOSH 5503																		
PCBs (54% Cl) *(see polychlorobiphenyls)*	NIOSH 5503																		
PCBs (polychlorinated biphenyls)	EPA TO-4A					200-280 L/min		24 hrs		varies	PUF	226-131	55	FLT	225-1808	107			
Pentachlorobenzene	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54						
Pentachlorobenzene (polychlorobenzenes)	NIOSH 5517			3-12		10-200		varies		GC-ECD	FLT ST	Special order 226-30-04	48	CST	Special order				
Pentachlorophenol	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF	226-92	54						
Pentachlorophenol	NIOSH 5512	0.5 mg/m^3		480		1000		8		HPLC-UV	CST IMP FLT	225-3LF 225-36-2 225-5	113 70 100	SCN IT	225-26 225-22	115 70			
Pentachlorophenol	OSHA 39	0.5 mg/m^3		48		200		4		HPLC-UV	ST	226-97	50						
Pentaerythritol (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT CYC	225-5-37-P 225-01-02	105 125	C/HLD CST	225-1 225-3LF	114 113			
Pentaerythritol (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT CST	225-5-37-P 225-2LF	105 113	C/HLD	225-1	114			
Pentamidine isethionate	NIOSH 5032			960		2000		8		HPLC-FD	CST C/HLD	225-4 225-1	113 114	FLT	225-5-37-P	105			
n-Pentane	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02	37			
n-Pentane	Internal					14.9 ml/min		8-24 hrs		SE, GC	PS	690-105	96						
n-Pentane (hydrocarbons, BP 36 to 216 C)	NIOSH 1500	120	610	4	4	10-200	10-200	varies	varies	GC-FID	ST	226-01	48						
2,3-Pentanedione	OSHA 1016	0.5		10	3	50	200	200 (min)	15	GC-FID	ST	226-183	51						
2-Pentanone (Ketones I)	NIOSH 2555			1-10		10-200		varies		GC-FID	ST	NA SKC							
2-Pentanone (methyl propyl ketone)	NIOSH 1300	150		10		200		50 (min)	15	GC-FID	ST	226-01	48						
2-Pentanone (methyl propyl ketone) (Ketones I)	NIOSH 1300	150		10		20(50)		8(3.3)		GC-FID	ST	226-01	48						

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Peracetic acid and Hydrogen peroxide	NON 57				15		1000 π		15	MAS/HPLC-UV	CF/CST 225-9030 68 ST 226-193-UC or ST 226-199-UC 52
Peracetic acid	OSHA PV2321		0.4		15		1000		15	GC-FID	CF/CST 225-9037 68 IMP N/A SKC
Perchloric acid	OSHA ID 115SG			120		500		4		CLR	IMP 225-36-2 70 IT 225-22 70
Perchloroethylene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Perchloroethylene	Indoor					13.1 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 or PS 690-104 96
Perchloroethylene	Internal					0.55 ml/min		24 hrs-7 days		TD, GC	PS 690-101 or PS 690-103 or PS 690-104 with PS 690-300 96
Perchloroethylene	Internal					13.1 ml/min		8 hrs-30 days		SE, GC	PS 690-105 96
Perchloroethylene (tetrachloroethylene)	OSHA 1001	100	200 (C)			13.06		8	5	GC-FID	PS 575-002 82
Perchloroethylene (tetrachloroethylene)	OSHA 1001	100	200 (C)	12	0.75	50	50	4	5	GC-FID	ST 226-01 48
Perchloroethylene (tetrachloroethylene) (hydrocarbons, halogenated)	NIOSH 1003	LFC		3		10-200		varies		GC-FID	ST 226-01 48
Perchloroethylene (tetrachloroethylene) (portable GC)	NIOSH 3704	LFC		1		20-5000		varies		P GC	SB 232-01 or SB 249-01-PP with PT NA SKC with SBLK NA SKC
Perlite (< 1% Quartz) *(see Particulates Not Otherwise Regulated, total and respirable)*											
cis-Permethrin	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF 226-92 54
trans-Permethrin	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF 226-92 54
Peroxyacetic acid (peracetic acid) & Hydrogen peroxide	NON 57				15		1000 π		15	MAS/HPLC-UV	CF/CST 225-9030 68 ST 226-193-UC or ST 226-199-UC 52
Pesticides	EPA IP-8					1-5 L/min		4-24 hrs		GC-ECD	PUF 226-92 or PUF 226-124 54
Pesticides	EPA TO-10A					1-5 L/min		4-24 hrs		GC-ECD	PUF 226-92 or PUF 226-124 54
Pesticides, carbamate	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF 226-92 54
Pesticides, organochlorine	ASTM D 4861			240-7200		1000-5000		4-24		varies	PUF 226-92 or PUF 226-124 54
Pesticides, organochlorine	EPA TO-4A					200-280 L/min		24 hrs		varies	PUF 226-131 55 FLT 225-1808 107
Pesticides, organonitrogen *(see specific compounds)*	NIOSH 5601			240		1000		4		HPLC-UV	ST 226-58 or ST 226-30-16 48
Pesticides, organophosphorus	ASTM D 4861			240-7200		1000-5000		4-24		varies	PUF 226-92 or PUF 226-124 54
Pesticides, pyrethrin	ASTM D 4861			240- 7200		1000-5000		4-24		HPLC-UV	PUF 226-92 54
Pesticides, triazine	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV or GC-ECD	PUF 226-92 54
Petroleum distillate (naphthas)	NIOSH 1550	350 mg/m³	1800 mg/m³	3.6	1.5	20	100	3	15	GC-FID	ST 226-01 48
Petroleum distillate fractions (PDF)	OSHA 48	500		3		200		15 min		GC-FID	ST 226-01 48
Petroleum ether (benzin) (naphthas)	NIOSH 1550	350 mg/m³	1800 mg/m³	3	1.5	20(50)	100	2.5(1)	15	GC-FID	ST 226-01 48
Petroleum naphtha (naphthas)	NIOSH 1550	350 mg/m³	1800 mg/m³	3	1.5	20(50)	100	2.5(1)	15	GC-FID	ST 226-01 48
Phenanthrene	OSHA 58			960		2000		8		GR & HPLC-FD, or GR & HPLC-UV	FLT 225-7 108 CST 225-2LF 113 C/HLD 225-1 114
Phenanthrene (Phenanthracene) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m³ (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST 226-57 49
Phenanthrene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m³ (max)		225 L/min		1-24		GC-MS	PUF 226-131 55 FLT 225-1808 107
Phenanthrene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
Phenanthrene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-UV	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
Phenol	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Phenol	EPA TO-8			< 80 L		100-1000 ml/min				HPLC-UV	IMP 225-36-1 70 IT 225-22 70
Phenol	OSHA 32	5		24		100		4		HPLC-UV	ST 226-95 50
Phenol (cresols)	NIOSH 2546	5	15.6 (15 min)	24	3	100	200	4	15	GC-FID	ST 226-95 50
Phenolics (screening)	NIOSH 2549			1-6		10-50		varies		TD, GC-MS	ST 226-330 52

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞															
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time									
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number						
Phenothiazine	OSHA PV2048			100		1000		1		GC-NPD	F/CST	225-706	108	C/HLD	225-1	114	
Phenyl ether	NIOSH 1617	1		48		100		8		GC-FID	ST	226-01	48				
Phenyl ether	OSHA PV2022	1		20		200		100 min		GC-FID	ST	226-95	50				
Phenyl ether-biphenyl mix	NIOSH 2013	1		24		50		8		GC-FID	ST	226-10	48				
Phenyl glycidyl ether	NIOSH 1619		1 (15 min)		80		1000		80	GC-FID	ST	226-01	48				
Phenyl hydrazine	NIOSH 3518		0.14 (120 min)		120		1000		120	VAS	IMP	225-36-2	70	IT	225-22	70	
Phenyl mercaptan	OSHA PV2075			20		200		100 min		GC-FID	CF/CST	225-9007	68	C/HLD	225-1	114	
N-Phenyl-1-naphthylamine	OSHA 96			240		2000		4		HPLC-FD	FLT C/HLD	225-703 ‡ 225-1	108 114	CST	225-3-23	113	
N-Phenyl-2-naphthylamine	OSHA 96			240		1000		4		HPLC-FD	FLT C/HLD	225-703 ‡ 225-1	108 114	CST	225-3-23	113	
m-Phenylenediamine	OSHA 87			100		1000		100 min		HPLC-UV	CF/CST	225-9004	68	C/HLD	225-1	114	
o-Phenylenediamine	OSHA 87			100		1000		100 min		HPLC-UV	CF/CST	225-9004	68	C/HLD	225-1	114	
p-Phenylenediamine	OSHA 87	0.1 mg/m³		100		1000		100 min		HPLC-UV	CF/CST	225-9004	68	C/HLD	225-1	114	
o-Phenylphenol	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF	226-92	54				
Phorate	ASTM D 4861			240-7200		1000-5000		4-24		GC-NPD	PUF	226-92	54				
Phorate (Organophosphorus Pesticides)	NIOSH 5600	0.05 mg/m³	0.2 mg/m³	240		1000		4		GC-FPD	ST	226-58	49				
Phosdrin (mevinphos) (Organophosphorus Pesticides)	NIOSH 5600	0.01	0.03	120	15	1000	1000	2	15	GC-FPD	ST	226-58	49				
Phosgene	EPA TO-6			< 50 L		100-1000 ml/min				HPLC-UV	IMP	225-36-1	70	IT	225-22	70	
Phosgene	OSHA 61	0.1		240		1000		4		GC-NPD	ST	226-117	50				
Phosgene & chloroformates	NON 40			24		50		8		GC-FPD	ST	226-153	51				
Phosphine	NIOSH 6002	0.3	1	12	3	100	200	8	15	UV-VIS	ST	226-165A ††	51				
Phosphine	OSHA 1003	0.3		240	30	1000	2000	4	15	ICP-AES	CF/CST	225-9018 ††	68	C/HLD	225-1	114	
Phosphoric acid	NIOSH 7908	1 mg/m³	3 mg/m³	960	30	2000	2000	8	15	IC-CD	CF/CST	225-9033	68	C/HLD	225-1	114	
Phosphoric acid	OSHA ID 111	1 mg/m³		960	30	2000	2000	8	15	IC	F/CST	225-3-01	100	C/HLD	225-1	114	
Phosphoric acid	OSHA ID 165SG	1 mg/m³		960	30	2000	2000	8	15	IC	ST	226-10-03	48				
Phosphorous (Elements by ICP HNO_3 Digestion)	NIOSH 7303	0.1 mg/m³		250-500,000		1000-4000		varies		ICP-AES	F/CST	225-3-01	100	C/HLD	225-1	114	
Phosphorus	NIOSH 7905	0.1 mg/m³		12		200		1		GC-FPD	ST	226-35-03	48				
Phosphorus (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	0.1 mg/m³		9-2000		1000-4000		varies		ICP-AES	SC	225-8517	101	C/HLD	225-1	114	
Phosphorus (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	0.1 mg/m³		25-2000		1000-4000		varies		ICP-AES	F/CST C/HLD	225-3-01 225-1	or 114	F/CST	225-803	105	
Phosphorus (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	0.1 mg/m³		25-200		1000-4000		varies		ICP-AES	F/CST	225-3-01	100	C/HLD	225-1	114	
Phosphorus (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W	225-2414	170	TMP	225-2415	170	
Phosphorus pentasulfide	OSHA ID 128SG	1 mg/m³		960	30	2000	2000	8	15	IC	F/CST	225-802	105	C/HLD	225-1	114	
Phosphorus pentoxide	OSHA ID 111			480		1000		8		IC	F/CST	225-3-01	100	C/HLD	225-1	114	
Phosphorus trichloride	NIOSH 6402	0.2	0.5	24		200		2		VAS	IMP	225-36-2	70	IT	225-22	70	
Phthalates *(see specific compounds)*																	
Phthalic anhydride	OSHA 90	2		75		1000		1.25		HPLC-UV	CF/CST	225-9034	68	C/HLD	225-1	114	
Picloram (tordon) (total dust)	OSHA PV2049	15 mg/m³		60		1000		1		GR	F/CST	225-803	105	C/HLD	225-1	114	
Picloram (tordon) (respirable dust)	OSHA PV2049	5 mg/m³		varies		varies		varies		GR	FLT CYC	225-706 225-105	108 124	C/HLD	225-1	114	
alpha-Pinene	Internal					11.3 ml/min		8-24 hrs		TD, GC	PS	690-101	or	PS	690-104	96	
alpha-Pinene	Internal					11.3 ml/min		8-24 hrs		SE, GC	PS	690-105	96				
alpha-Pinene (terpenes)	NIOSH 1552			24		50		8		GC-FID	ST	226-01	48				
beta-Pinene (terpenes)	NIOSH 1552			24		50		8		GC-FID	ST	226-01	48				
Piperonyl butoxide	OSHA PV2110			30		1000		30 min		HPLC-UV	ST	226-30-16	48				

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Pirimiphos methyl	OSHA PV2071			120		1000		2		GC-ECD	ST 226-30-16 48
Plaster of Paris (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Plaster of Paris (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Platinum	OSHA ID 130SG			90		1000		1.5		AA	F/CST 225-3-01 100 C/HLD 225-1 114
Platinum (Elements by ICP HNO_3 Digestion)	NIOSH 7303			200-25,000,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Platinum (as Pt), metal	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Platinum (as Pt), soluble salts	OSHA ID 121	2 µg/m³		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
PM2.5	EPA IP-10A					9 L/min		24 hrs		GR	CI 225-370 132 FLT 225-17-21 106 FLT 225-1709 106
PM2.5	EPA IP-10A					10 L/min		24 hrs		GR	PEM 761-203B 130 FLT 225-1709 106
PNAs (Polynuclear Aromatic Hydrocarbons by GC, *see specific compounds*)	NIOSH 5515			480		2000		4		GC-FID	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
PNAs by HPLC *(see specific compounds)*	NIOSH 5506			480		2000		4		HPLC-UV	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
PNAs selected	OSHA 58			960		2000		8		GR & HPLC-FD, or GR & HPLC-UV	FLT 225-7 108 CST 225-2LF 113 C/HLD 225-1 114
Pollen (in air)				15-150		15000		1-10 min		varies	STC 225-9820 112
Pollen (in air)	NON 48			62.5-375		12,500 +		5-30		varies	BS 225-9595 136 VT 225-9598A ◊ 136
Polychlorinated biphenyls	ASTM D 4861			240-7200		1000-5000		4-24		varies	PUF 226-92 or PUF 226-124 54
Polychlorinated biphenyls	NIOSH 5503	0.001 mg/m³ (10 hrs)		48		100(200)		8(4)		GC-ECD	FLT 225-16 108 CST 225-32 114 ST 226-39 49
Polychlorobenzenes *(see specific compounds)*	NIOSH 5517	varies		varies		varies		8		GC-ECD	FLT Special order ST 226-30-04 48 CST Special order C/HLD 225-1 114
Polychlorobiphenyls (42% Cl)	NIOSH 5503	0.001 mg/m³ (10 hrs)		1L(@0.5mg/m³) -50		50-200		varies		GC-ECD	FLT 225-16 108 CST 225-32 114 ST 226-39 49
Polychlorobiphenyls (54% Cl)	NIOSH 5503	0.001 mg/m³ (10 hrs)		1L(@0.5mg/m³) -50		50-200		varies		GC-ECD	FLT 225-16 108 CST 225-32 114 ST 226-39 49
Polycyclic aromatic compounds (PACs), total	NIOSH 5800			960	30	2000	2000	8	15	FLUOR	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
Polycyclic aromatic hydrocarbons (PAHs)	EPA IP-7			30,000 L		20 L/min				GC-FID, -MS, HPLC	PUF 226-131 55 FLT 225-1808 107
Polycyclic aromatic hydrocarbons (PAHs)	EPA TO-13A					220 L/min		24 hrs		GC-MS	PUF 226-131 55 FLT 225-1808 107
Polynuclear aromatic hydrocarbons (polynuclear aromatic hydrocarbons by GC, *see specific compounds*)	NIOSH 5515	varies		480		2000		4		GC-FID	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
Polynuclear aromatic hydrocarbons (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209	varies		350 m³ (max)		225 L/min		4-24		GC-MS	PUF 226-131 55 FLT 225-1808 107
Polynuclear aromatic hydrocarbons by HPLC *(see specific compounds)*	NIOSH 5506	varies		480		2000		4		HPLC-UV	F/CST 225-1713 106 ST 226-30-04 48 C/HLD 225-1 114
Portland cement (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Portland cement (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Portland cement (respirable dust) *(see respirable dust)*	OSHA ID 142 (v4)										
Portland cement (total dust)	OSHA ID 207	15 mg/m³		240		1000		4		XRD	F/CST 225-803 105 C/HLD 225-1 114
Potassium & compounds	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Potassium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306			Varies		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Potassium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301			5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Potassium (Elements by ICP $HNO_3/HClO_4$ Ashing)	NIOSH 7300			5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Potassium chromate (CR(VI))	OSHA ID 215 (V2)	0.005 mg/m^3		960		2000		8		IC-UV	F/CST 225-802 105 C/HLD 225-1 114
Potassium cyanide (cyanides)	NIOSH 7904		5 mg/m^3 (10 min)		15		1000		15	ISE	FLT 225-17-32 Δ 106 IMP 225-36-2 70 C/HLD 225-1 114 CST 225-2LF 113 IT 225-22 70
Potassium hydroxide (alkaline dust)	NIOSH 7401			960		2000		8		TITRA	F/CST 225-1715 106 C/HLD 225-1 114
Potassium hydroxide (as K)	OSHA ID 121				10		2000		5	AA or AES	F/CST 225-508 or F/CST 225-3-01 or C/HLD 225-1 114 F/CST 225-802 or F/CST 225-8408 100
Progesterone	OSHA PV2001			240		1000		4		HPLC-UV	F/CST 225-706 108 C/HLD 225-1 114
Propane	OSHA PV2077	1000		5		100		50 min		GC-FID	ST NA SKC
1,2,3-Propanetriol trinitrate	OSHA 43			15		1000		15 min		HPLC-UV	ST 226-35-03 48
n-Propanol	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
Propargyl alcohol	OSHA 97			6		50		2		GC-ECD	ST 226-178 51
Propazine	ASTM D 4861			240-7200		1000-5000		4-24		GC-NPD	PUF 226-92 54
Propham (Organonitrogen Pesticides)	NIOSH 5601			240		1000		4		HPLC-UV	ST 226-58 or ST 226-30-16 48
Propionaldehyde	ASTM D 5197			varies		500-1200		5 min-24 hrs		HPLC-UV	ST 226-120 ○ or ST 226-119 50
Propionaldehyde (Aldehydes, Screening)	NIOSH 2539			5		20		4		GC-FID & GC-MS	ST 226-118 50
Propionic acid	OSHA PV2293			18		2000		90 min		IC	ST 226-15 48
Propionitrile	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
Propoxur (Baygon)	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF 226-92 54
Propoxur (Baygon)	OSHA PV2007			60		1000		1		HPLC-UV	ST 226-30-16 48
Propoxur (Organonitrogen Pesticides)	NIOSH 5601	0.5 mg/m^3		240		1000		4		HPLC-UV	ST 226-58 or ST 226-30-16 48
n-Propyl acetate	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
n-Propyl acetate (Esters I)	NIOSH 1450	200	250	1-10	1-10	10-200	10-200	varies	varies	GC-FID	ST 226-01 48
Propyl alcohol	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
n-Propyl alcohol	OSHA 5001	200		12		4				GC-FID	ST 226-82 50
n-Propyl alcohol (alcohols combined)	NIOSH 1405	200	250 (skin)	1-10	1-10	10-200	10-200	varies	varies	GC-FID	ST 226-01 48
n-Propyl alcohol (alcohols II)	NIOSH 1401	200	250	10	3	20(50)	200	8(3.3)	15	GC-FID	ST 226-01 48
n-Propyl benzene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
Propylene dichloride (1,2-dichloro propane)	NIOSH 1013	LFC		3		20		2.5		GC-ECN	ST 226-81A 49
Propylene glycol	NIOSH 5523			5-60		500-2000		varies		GC-FID	ST 226-57 49
Propylene glycol	OSHA PV2051			60	15	1000	1000	1	15	GC-FID	ST 226-57 49
Propylene glycol monomethyl ether (glycol ethers)	NIOSH 2554			3-25		100-200		varies		GC-FID	ST 226-81A 49
Propylene glycol monomethyl ether acetate (glycol ethers)	NIOSH 2554			3-25		100-200		varies		GC-FID	ST 226-81A 49
Propylene oxide (1, 2-epoxypropane)	NIOSH 1612	LFC		5		20		4.2		GC-FID	ST 226-01 48
Propylene oxide (1, 2-epoxypropane)	OSHA 88	100		5	5	100	1000	50 min	5	GC-FID	ST 226-81A 49
Pyrene	OSHA 58			960		2000		8		GR & HPLC-FD, or GR & HPLC-UV	FLT 225-7 108 C/HLD 225-1 114 CST 225-2LF 113
Pyrene (benzo[def]phenanthrene) (Polynuclear Aromatic Hydrocarbons by GC-MS-SIM)	NIOSH 5528	0.1 mg/m^3 (cyclohexane soluble fraction)		1-480		1000		1 min-8 hrs		GC-MS-SIM	ST 226-57 49
Pyrene (Polynuclear Aromatic Hydrocarbons by GC-MS)	ASTM D 6209			350 m^3 (max)		225 L/min		1-24		GC-MS	PUF 226-131 55 FLT 225-1808 107
Pyrene (Polynuclear Aromatic Hydrocarbons by GC)	NIOSH 5515			480		2000		4		GC-FID	F/CST 225-1713 106 C/HLD 225-1 114 ST 226-30-04 48
Pyrene (Polynuclear Aromatic Hydrocarbons by HPLC)	NIOSH 5506			480		2000		4		HPLC-FD	F/CST 225-1713 106 C/HLD 225-1 114 ST 226-30-04 48
Pyrethrin pesticides *(see specific compounds)*	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Pyrethrum	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF 226-92 54

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Pyrethrum	NIOSH 5008	5 mg/m³		100		1000		2		HPLC-UV	F/CST 225-709 108 C/HLD 225-1 114 SP 225-27 115
Pyrethrum	OSHA 70	5 mg/m³		60		1000		1		GC-ECD	ST 226-30-16 48
Pyridine	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Pyridine	NIOSH 1613	5		48		100		8		GC-FID	ST 226-01 48
Pyridine	OSHA PV2295	5		10		100		100 min		GC-FID	ST 226-95 50
Quartz (respirable) in coal dust, (silica in coal mine dust)	NIOSH 7603	0.05 mg/m³		300-1000		2000-4000		varies		IR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-309 113
Quartz *(see silica, respirable crystalline)*	OSHA ID 142 (v4)										
Quartz (silica, crystalline [respirable]) by XRD	NIOSH 7500	0.05 mg/m³		400-1000		2500		varies		XRD	F/CST 225-803 105 CYC 225-01-02 125 C/HLD 225-1 114
Quartz (silica, crystalline by IR)	NIOSH 7602	0.05 mg/m³		1000		2000-4000		varies		IR	F/CST 225-803 105 C/HLD 225-1 114 CYC 225-01-02 125
Radon progeny (on dust, in mines)	NON 56			5		2000		5 min		DRI	FLT 225-702 108 CST 225-1107 114
Resmethrin	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF 226-92 54
Resmethrin	OSHA PV2052			60		1000		1		HPLC-UV	ST 226-30-16 48
Resorcinol	NIOSH 5701	10		120		500		4		GC-FID	ST 226-57 49
Respirable Dust using Aluminum Cyclone	OSHA ID 142 (v4)	50 µg/m³		1200		2500		8		GR & XRD	FLT 225-5-37-P 105 CST 225-3050LF 113 C/HLD 225-1 114 CYC 225-01-02 125
Respirable Dust using GS-3 Cyclone	OSHA ID 142 (v4)	50 µg/m³		1320		2750		8		GR & XRD	FLT 225-5-37-P 105 CST 225-3050LF 113 C/HLD 225-1 114 CYC 225-100 124
Respirable Dust using PPI Samplers	OSHA ID 142 (v4)	50 µg/m³		960		2000		8		GR & XRD	FLT 225-5-37-P 105 PPI 225-385 126
Rhodamine B	OSHA PV2072			240		1000		4		HPLC-UV	F/CST 225-709 108 C/HLD 225-1 114
Ribavirin	NIOSH 5027			480		1000		8		HPLC-UV	F/CST 225-709 108 C/HLD 225-1 114
Ronnel	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
Ronnel	OSHA PV2054	15 mg/m³		60		1000		1		GC-FPD	ST 226-30-16 48
Ronnel (Organophosphorus Pesticides)	NIOSH 5600	10 mg/m³		60		1000		1		GC-FPD	ST 226-58 49
Rotenone	NIOSH 5007	5 mg/m³		120		1000		2		HPLC-UV	FLT 225-17-01 106 CST 225-4 113 C/HLD 225-1 114
Rouge (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Rouge (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Rubber solvent (naphthas)	NIOSH 1550	350 mg/m³	1800 mg/m³	10	1.5	20(50)	100	8(3.3)	15	GC-FID	ST 226-01 48
Safrotin	OSHA PV2050			60		1000		1		GC-ECD	F/CST 225-709 108 C/HLD 225-1 114
Scopolamine methyl nitrate	OSHA PV2144			120		1000		2		HPLC-UV	F/CST 225-709 or 114 F/CST 225-706 108 C/HLD 225-1
Selenium	OSHA ID 121	0.2 mg/m³		960		2000		8		AA or AES	F/CST 225-508 or F/CST 225-802 or 100 F/CST 225-3-01 or F/CST 225-8408 C/HLD 225-1 114
Selenium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	0.2 mg/m³		2-2000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Selenium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	0.2 mg/m³		13-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or 114 F/CST 225-803 ¥ 105 C/HLD 225-1
Selenium (Elements by ICP HNO_3 Digestion)	NIOSH 7303	0.2 mg/m³		8-250,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Selenium (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	0.2 mg/m³		13-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Selenium (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Sevin *(see carbaryl)*											
Silica (quartz) in coal dust (quartz in coal mine dust by IR)	NIOSH 7603	0.05 mg/m³		300-1000		2000-4000		varies		IR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Silica, amorphous (respirable)	NIOSH 7501	6 mg/m³		50-400		2500		varies		XRD	F/CST 225-803 105 C/HLD 225-1 114 CYC 225-01-02 125
Silica, crystalline (respirable) by XRD	NIOSH 7500	0.05 mg/m³		400-1000		2500		varies		XRD	F/CST 225-803 105 CYC 225-01-02 125 C/HLD 225-1 114
Silica, crystalline by IR	NIOSH 7602	0.05 mg/m³		1000		2000-4000		varies		IR	F/CST 225-803 105 C/HLD 225-1 114 CYC 225-01-02 125

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞							
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time	
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)
Silica, fused *(see silica, respirable crystalline)*	OSHA ID 142 (v4)								
Silica, respirable crystalline (as quartz, cristobalite, tridymite) using Aluminum Cyclone	OSHA ID 142 (v4)	50 µg/m³		1200		2500		8	
Silica, respirable crystalline (as quartz, cristobalite, tridymite) using GS-3 Cyclone	OSHA ID 142 (v4)	50 µg/m³		1320		2750		8	
Silica, respirable crystalline (as quartz, cristobalite, tridymite) using PPI Samplers	OSHA ID 142 (v4)	50 µg/m³		960		2000		8	
Silicon (particulates, respirable)	NIOSH 0600			375		2500		2.5	
Silicon (particulates, total)	NIOSH 0500			133		1000-2000		1	
Silicon carbide (particulates, respirable)	NIOSH 0600			375		2500		2.5	
Silicon carbide (particulates, total)	NIOSH 0500			133		1000-2000		1	
Silver (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	0.01 mg/m³		6-2000		1000-4000		varies	
Silver (Elements by ICP Aqua Regia Ashing)	NIOSH 7301			250-2000		1000-4000		varies	
Silver (Elements by ICP $HNO_3/HClO_4$ Ashing)	NIOSH 7300	0.01 mg/m³ (metal, soluble)		250-2000		1000-4000		varies	
Silver (Elements on Wipes)	NIOSH 9102			wipe					
Silver, metal & soluble compounds (as Ag)	OSHA ID 121	0.01 mg/m³		960		2000		8	
Silver, metal & soluble compounds (ICP analysis of metal/metalloid particulates from solder operations)	OSHA ID 206	0.01 mg/m³		960		2000		8	
Simazine	ASTM D 4861			240-7200		1000-5000		4-24	
Simazine	NIOSH 5602			480		1000		8	
Sodium azide	OSHA ID 211			5		1000		5	
Sodium bisulfite	OSHA ID 121	5 mg/m³		960		2000		8	
Sodium fluoride (fluorides)	NIOSH 7902	2.5 mg/m³		480	30	1000	2000	8	15
Sodium fluoride (fluorides)	NIOSH 7906	2.5 mg/m³		960	30	2000	2000	8	15
Sodium hexafluoroaluminate (fluorides)	NIOSH 7902	2.5 mg/m³		480	30	1000	2000	8	15
Sodium hexafluoroaluminate (fluorides)	NIOSH 7906	2.5 mg/m³		960		2000		8	
Sodium hydroxide	OSHA ID 121	2 mg/m³		960	30	2000	2000	8	15
Sodium hydroxide (alkaline dust)	NIOSH 7401		2 mg/m³ (15 min)	360		1500		4	
Sodium metabisulfite	OSHA ID 121	5 mg/m³		960		2000		8	
Sodium polyacrylate *(see super absorbent polymer)*									
Solanesol (environmental tobacco smoke, respirable particles)	ASTM D 6271			150-3600		2500		1-24	
Solder fume (ICP analysis of metal/metalloid particulates from solder operations)	OSHA ID 206			480		2000		4	
Soot *(see elemental carbon)*	NIOSH 5040								
Spores (bacterial, fungal) (in air)					15-150		15000		1-10 min
Spores (bacterial, fungal) (in air)	NON 48			62.5-375		12,500 +		5-30	
Starch (particulates, respirable)	NIOSH 0600			375		2500		2.5	
Starch (particulates, total)	NIOSH 0500			133		1000-2000		1	
Starch *(see Particulates Not Otherwise Regulated, total and respirable)*									
Stoddard solvent	OSHA 48	500		3		200		15 min	
Stoddard solvent (naphthas)	NIOSH 1550	350 mg/m³	1800 mg/m³	10	1.5	20(50)	100	8(3.3)	15

Chemical Hazard	Analytical Method	SKC Collecting Equipment & Page Number
Silica, fused *(see silica, respirable crystalline)*		
Silica, respirable crystalline (as quartz, cristobalite, tridymite) using Aluminum Cyclone	XRD	FLT 225-5-37-P 105 CST 225-3050LF 113 C/HLD 225-1 114 CYC 225-01-02 125
Silica, respirable crystalline (as quartz, cristobalite, tridymite) using GS-3 Cyclone	XRD	FLT 225-5-37-P 105 CST 225-3050LF 113 C/HLD 225-1 114 CYC 225-100 124
Silica, respirable crystalline (as quartz, cristobalite, tridymite) using PPI Samplers	XRD	FLT 225-5-37-P 105
Silicon (particulates, respirable)	GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Silicon (particulates, total)	GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Silicon carbide (particulates, respirable)	GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Silicon carbide (particulates, total)	GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Silver (Elements by Cellulosic Internal Capsule Sampler)	ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Silver (Elements by ICP Aqua Regia Ashing)	ICP-AES	F/CST 225-3-01 or F/CST 225-803 105 C/HLD 225-1 114
Silver (Elements by ICP $HNO_3/HClO_4$ Ashing)	ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Silver (Elements on Wipes)	ICP-AES	W 225-2414 170 TMP 225-2415 170
Silver, metal & soluble compounds (as Ag)	AA or AES	F/CST 225-508 or F/CST 225-802 or F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Silver, metal & soluble compounds (ICP analysis of metal/metalloid particulates from solder operations)	ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Simazine	HPLC-UV	PUF 226-92 54
Simazine	GC-ECD	ST 226-58 49
Sodium azide	IC-UV	ST 226-55 49 FLT 225-5-37-P 105 CST 225-2LF 113 SPC 225-23 115 C/HLD 225-1 114
Sodium bisulfite	AA or AES	F/CST 225-3-01 100 C/HLD 225-1 114
Sodium fluoride (fluorides)	ISE	CF/CST 225-9001 68 C/HLD 225-1 114
Sodium fluoride (fluorides)	IC-CD	CF/CST 225-9031 68 C/HLD 225-1 114
Sodium hexafluoroaluminate (fluorides)	ISE	CF/CST 225-9001 68 C/HLD 225-1 114
Sodium hexafluoroaluminate (fluorides)	IC-CD	CF/CST 225-9031 68 C/HLD 225-1 114
Sodium hydroxide	AA or AES	F/CST 225-3-01 100 C/HLD 225-1 114
Sodium hydroxide (alkaline dust)	TITRA	F/CST 225-1715 106 C/HLD 225-1 114
Sodium metabisulfite	AA or AES	F/CST 225-3-01 100 C/HLD 225-1 114
Sodium polyacrylate *(see super absorbent polymer)*		
Solanesol (environmental tobacco smoke, respirable particles)	HPLC-UV	FLT 225-17-32 106 CST 225-3LF 113 CYC 225-01-02 125 C/HLD 225-1 114
Solder fume (ICP analysis of metal/metalloid particulates from solder operations)	ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Soot *(see elemental carbon)*	TOA-FID	
Spores (bacterial, fungal) (in air)	varies	STC 225-9820 112
Spores (bacterial, fungal) (in air)	BS	225-9595 136 VT 225-9598A 136
Starch (particulates, respirable)	GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Starch (particulates, total)	GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Starch *(see Particulates Not Otherwise Regulated, total and respirable)*		
Stoddard solvent	GC-FID	ST 226-01 48
Stoddard solvent (naphthas)	GC-FID	ST 226-01 48

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Strontium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306			Varies		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Strontium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301			10-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or 114 C/HLD 225-1 F/CST 225-803 ¥ 105
Strontium (Elements by ICP HNO_3 Digestion)	NIOSH 7303			300-100,000,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Strontium (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	0.5 mg/m³		10-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Strontium (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Strychnine	NIOSH 5016	0.15 mg/m³ (10 hrs)		180		1500		2		HPLC-UV	F/CST 225-706 108 C/HLD 225-1 114
Styrene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
Styrene	Internal					13.7 ml/min		8-24 hrs		TD, GC	PS 690-101 or 96 PS 690-104 PS 690-103 or
Styrene	Internal					13.7 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Styrene (phenylethylene)	NON 54			10	3	20	200	8	15	GC-FID	ST 226-81A 49
Styrene (phenylethylene)	OSHA 1014	100	200 (C)			13.55	13.55	8	15	HPLC-UV	PS 575-006 82
Styrene (phenylethylene)	OSHA 89	100	200 (C)	12	0.75	50	50	4	15	GC-FID	ST 226-73 49
Styrene (phenylethylene) (Hydrocarbons, Aromatic)	NIOSH 1501	50	100	1-14	1-14	10-1000	10-1000	varies	varies	GC-FID	ST 226-01 48
Sucrose (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 CYC 225-01-02 125 C/HLD 225-1 114 CST 225-3LF 113
Sucrose (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 CST 225-2LF 113 C/HLD 225-1 114
Sulfur *(see Particulates Not Otherwise Regulated, total and respirable)*											
Sulfur dioxide	NIOSH 6004	2	5	180	15	1000	1000	3	15	IC	CF/CST 225-9005 68 C/HLD 225-1 114
Sulfur dioxide	OSHA 1011	5 ppm		12	7.5	50	500	4	15	IC	CF/CST 225-9005 68
Sulfur hexafluoride by portable GC	NIOSH 6602	1000		varies		20-100		varies		P GC-ECD	SB 232-03 or SB 231-03 60
Sulfur tetrafluoride	OSHA ID 110				5		1000		5	ISE	IMP 225-36-2 70 IT 225-22 70
Sulfuric acid	NIOSH 7908	1 mg/m³		960		2000		8		IC-CD	CF/CST 225-9033 68 C/HLD 225-1 114
Sulfuric acid	NIOSH 7908	0.2 mg/m³ Σ		960		2000		8		IC	PPI 225-381 128 IS 225-388 126 FLT 225-1827 107 SP 225-27 115
Sulfuric acid	OSHA ID 113	1 mg/m³		480		2000		4		IC	F/CST 225-3-01 100 C/HLD 225-1 114
Sulfuric acid	OSHA ID 113	0.2 mg/m³ Σ		480		2000		4		IC	PPI 225-381 128 IS 225-388 126 FLT 225-5 100 SP 225-27 115
Sulfuric acid	OSHA ID 165SG	1 mg/m³		96		200		8		IC	ST 226-10-03 48
Sulfuric acid mist	ASTM D 4856			40		1000		40 min		IC	F/CST 225-3-01 100 C/HLD 225-1 114
Sulfuryl fluoride	NIOSH 6012	5	10	1.3-10		50-100		varies		IC-CD	ST 226-16 48
Sulprofos	OSHA PV2037			240		1000		4		GC-FPD	ST 226-30-16 48
Sulprofos (Organophosphorus Pesticides)	NIOSH 5600	1 mg/m³		240		1000		4		GC-FPD	ST 226-58 49
Super absorbent polymers	NIOSH 5035			960		2000		8		ICP-AES or AA	F/CST 225-802 105 C/HLD 225-1 114
Systox *(see demeton)*											
Talc (containing asbestos) *(see asbestos)*	OSHA ID 160										
Talc (respirable, no asbestos)	OSHA PV2121	20 mppcf		varies		varies		varies		GR	CYC 225-105 124 C/HLD 225-1 114 F/CST 225-803 105
2,4-TDI (toluene diisocyanate)	ASTM D 5932			15		1000		15		HPLC-UV-FD	CF/CST 225-9022 ▼ 68 C/HLD 225-1 114
2,4-TDI (toluene diisocyanate)	NIOSH 5522	LFC		360	20	1000	2000	6	10	HPLC-FD	IMP 225-36-1 70 IT 225-22 70
2,6-TDI (toluene diisocyanate)	ASTM D 5932			15		1000		15		HPLC-UV-FD	CF/CST 225-9022 ▼ 68 C/HLD 225-1 114
2,6-TDI (toluene diisocyanate)	NIOSH 5522	LFC		360	20	1000	2000	6	10	HPLC-FD	IMP 225-36-1 70 IT 225-22 70
2,4-TDI (Toluene diisocyanate) (isocyanates)	OR-OSHA 1010	0.02	0.005	45	5	1000	1000	45 min	5	HPLC	IMP 225-36-1 70 IT 225-22 70 CF/CST 225-9029 68
2,6-TDI (Toluene diisocyanate) (isocyanates)	OR-OSHA 1010	0.02	0.005	45	5	1000	1000	45 min	5	HPLC	IMP 225-36-1 70 IT 225-22 70 CF/CST 225-9029 68

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Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	C/STEL (ppm)	Vol. (liter) TWA	C/STEL	Rate (ml/min) TWA	C/STEL	Time TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
2, 4-TDI (toluene diisocyanate) (isocyanates, total)	NIOSH 5525	LFC		1-500		1000-2000		varies		HPLC-UV	FLT 225-7 ‡ 108 CST 225-4 113 SP 225-27 or IOM 225-76A 120 FLT 225-702 ‡ 108
2, 6-TDI (toluene diisocyanate) (isocyanates, total)	NIOSH 5525	LFC		1-500		1000-2000		varies		HPLC-UV	FLT 225-7 ‡ 108 CST 225-4 113 SP 225-27 or IOM 225-76A 120 FLT 225-702 ‡ 108
Tellurium	OSHA ID 121	0.1 mg/m³		960		2000		8		AA or AES	F/CST 225-3-01 100 C/HLD 225-1 114
Tellurium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306			7-2000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Tellurium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	0.1 mg/m³		25-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Tellurium (Elements by ICP HNO_3 Digestion)	NIOSH 7303	0.1 mg/m³		125-500,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Tellurium (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	0.1 mg/m³		25-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Tellurium (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Temephos (respirable dust)	OSHA PV2056	5 mg/m³		varies		varies		varies		GC-FPD	F/CST 225-706 108 C/HLD 225-1 114
Temephos (total dust)	OSHA PV2056	15 mg/m³		60		1000				HPLC-UV	F/CST 225-802 105 C/HLD 225-1 114
Terbufos (Organophosphorus Pesticides)	NIOSH 5600			240		1000		4		GC-FPD	ST 226-58 49
Terbuthiuron	ASTM D 4861			240-7200		1000-5000		4-24		HPLC-UV	PUF 226-92 54
Terpenes (screening)	NIOSH 2549			1-6		10-50		varies		TD, GC-MS	ST 226-330 52
Terpenes *(see specific compounds)*	NIOSH 1552			2-30		10-200		varies		GC-FID	ST 226-01 48
o-Terphenyl	NIOSH 5021	0.5		2-30		1000-3000		15		GC-FID	F/CST 225-1713 106 C/HLD 225-1 114
Testosterone	OSHA PV2001			240		1000		4		HPLC-UV	F/CST 225-706 108 C/HLD 225-1 114
1,1,2,2-Tetrabromoethane	NIOSH 2003			50-100		200-1000		varies		GC-FID	ST 226-10 48
Tetrabutyltin (organotin compounds as Sn)	NIOSH 5504	0.1 mg/m³		480		1000		8		HPLC & AA-GF	ST 226-30 48 F/CST 225-709 108 C/HLD 225-1 114
1,1,2,2-Tetrachloro-1,2-difluoroethane	NIOSH 1016	500		0.5 L (@500ppm) - 2		10-35		varies		GC-FID	ST 226-01 48
1,1,1,2-Tetrachloro-2,2-difluoroethane	NIOSH 1016	500		0.5 L (@500ppm) - 2		10-35		varies		GC-FID	ST 226-01 48
1,2,3,4-Tetrachlorobenzene	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-124 54
1,2,4,5-Tetrachlorobenzene (polychlorobenzenes)	NIOSH 5517			44997		10-200		varies		GC-ECD	FLT Special order CST Special order ST 226-30-04 48 C/HLD 225-1 114
1,1,1,2-Tetrachloroethane	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
1,1,2,2-Tetrachloroethane	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
1,1,2,2-Tetrachloroethane	Internal					11.8 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 or PS 690-104 96
1,1,2,2-Tetrachloroethane	Internal					11.8 ml/min		8-24 hrs		SE, GC	PS 690-105 96
1,1,2,2-Tetrachloroethane	NIOSH 1019	1		3-30		10-200		varies		GC-FID	ST 226-81A 49
1,1,2,2-Tetrachloroethane	NIOSH 2562	1		3-30		10-200		varies		GC-FID	ST NA SKC
Tetrachloroethylene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Tetrachloroethylene	Indoor					13.1 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 or PS 690-104 96
Tetrachloroethylene	Internal					0.55 ml/min		24 hrs-7 days		TD, GC	PS 690-101 or PS 690-103 or PS 690-104 with RR 690-300 96
Tetrachloroethylene	Internal					13.1 ml/min		8 hrs-30 days		SE, GC	PS 690-105 96
Tetrachloroethylene (hydrocarbons, halogenated)	NIOSH 1003	25	100 (C)	3		10-200		15 min-5 hrs		GC-FID	ST 226-01 48
Tetrachloroethylene (perchloroethylene)	OSHA 1001	100	200 (C)			13.06		8	5	GC-FID	PS 575-002 82
Tetrachloroethylene (perchloroethylene)	OSHA 1001	100	200 (C)	12	0.25	50	50	4	5	GC-FID	ST 226-01 48
Tetrachloroethylene (perchloroethylene) (portable GC)	NIOSH 3704	LFC		1		20-5000		varies		P GC	SB 232-01 or SB 249-01-PP with PT NA SKC with SBLK NA SKC
2,3,4,6-Tetrachlorophenol	OSHA 45			48		200		4		HPLC-UV	ST 226-97 50
Tetraethyl lead (as Pb)	NIOSH 2533	0.075 mg/m³		30-200		10-1000				GC-PID	ST 226-30-04 48
Tetraethyl pyrophosphate	NIOSH 2504	0.05 mg/m³		20 (@0.05 mg/m³)-49		10-200		varies		GC-FPD	ST NA SKC

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Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Tetraethyl tin	OSHA 110	0.1 mg/m³		48	3	200	200	4	15	GC-FID	ST 226-95 50
Tetraethylene glycol	NIOSH 5523			5-60		500-2000		varies		GC-FID	ST 226-57 49
Tetrahydrofuran	Internal					17.7 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
Tetrahydrofuran	Internal					17.7 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Tetrahydrofuran	NIOSH 1609	200	250	1-9		10-200		varies	15	GC-FID	ST 226-01 48
Tetrahydrofurfuryl acrylate	OSHA PV2131			48		200		4		GC-FID	ST 226-110 50
Tetrakis(hydroxymethyl)phosphonium chloride	NIOSH 5046			1-480		1000-1700		varies		HPLC-UV	CF/CST 225-9003 68
Tetramethyl lead (as Pb)	NIOSH 2534	0.075 mg/m³		15-100		10-200				GC-PID	ST 226-30-06 48
Tetramethyl thiouram disulfide *(see thiram)*											
Tetramethyl thiourea	NIOSH 3505			50 (@0.3 mg/m³) to 250		200-1000		varies		VAS	IMP 225-36-1 70 IT 225-22 70
Tetramethyl tin	OSHA PV2057	0.1 mg/m³		20		200		100 min		GC-FID	ST 226-01 48
Tetranitromethane	NIOSH 3513	1		20-250		500-1000		varies		GC-NPD	IMP 225-36-1 70 IT 225-22 70
Tetrasodium pyrophosphate	NIOSH 0500	5 mg/m³		7-133		1000-2000		varies		GR & IC	FLT 225-8204A 105 C/HLD 225-1 114
Tetrasodium pyrophosphate	OSHA ID 121			960		2000		8		AA or AES	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Thalium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	0.1 mg/m³ (skin, soluble)		25-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 105 C/HLD 225-1 114
Thallium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	0.1 mg/m³ (skin)		7-2000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Thallium (Elements by ICP HNO_3 Digestion)	NIOSH 7303	0.1 mg/m³ (skin, soluble)		35-500,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Thallium (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	0.1 mg/m³ (skin, soluble)		25-2000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Thallium (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Thallium (soluble compounds) (as Tl)	OSHA ID 121	0.1 mg/m³		960		2000		8		AA or AES	F/CST 225-3-01 100 C/HLD 225-1 114
Thiobencarb (Organonitrogen Pesticides)	NIOSH 5601			240		1000		4		HPLC-UV	ST 226-58 or ST 226-30-16 48
Thiophanate-methyl	OSHA PV2058			240		1000		4		HPLC-UV	F/CST 225-709 108 C/HLD 225-1 114
Thiophanate-methyl in air	NIOSH 5606			20-480		100-1000		varies		HPLC-UV	ST 226-58 49
Thiourea	OSHA PV2059			480		2000		4		HPLC-UV	F/CST 225-706 108 C/HLD 225-1 114
Thiram	NIOSH 5005	5 mg/m³		10-400		1000-4000		varies		HPLC-UV	FLT 225-17-01 106 CST 225-2LF 113 C/HLD 225-1 114
Tin (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	2 mg/m³		1-2000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Tin (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	2 mg/m³		5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Tin (Elements by ICP HNO_3 Digestion)	NIOSH 7303	2 mg/m³		1-25,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Tin (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	2 mg/m³		5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Tin (ICP analysis of metal/metalloid particulates from solder operations)	OSHA ID 206	2 mg/m³		480		2000		4		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Tin (inorganic compounds, except oxides) (as Sn)	OSHA ID 121	2 mg/m³		960		2000		8		AA or AES	F/CST 225-3-01 100 C/HLD 225-1 114
Tin (organic compounds) (as Sn) (organotin compounds)	NIOSH 5504	0.1 mg/m³		480		1000		8		HPLC & AA-GF	ST 226-30 48 F/CST 225-706 108 C/HLD 225-1 114
Tin oxide ((Stannous Oxide) as Sn)	OSHA ID 121	0.1 mg/m³		960		2000		8		AA or AES	F/CST 225-3-01 100 C/HLD 225-1 114
Titanium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306			Varies		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Titanium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301			5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Titanium (Elements by ICP HNO_3 Digestion)	NIOSH 7303			0.1-10,000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Titanium (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300			5-100		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Titanium dioxide (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Titanium dioxide (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Titanium dioxide (total dust)	OSHA PV2121	15 mg/m³		480-960		2000		4-8		GR	F/CST 225-802 105 C/HLD 225-1 114

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Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
TNT (2,4,6-trinitrotoluene)	OSHA 44	1.5 mg/m³		60		1000		1		GC-TEA-EAP	ST 226-56 49
o-Tolidine	OSHA 71			100		1000		100 min		GC-ECD	CF/CST 225-9004 68 C/HLD 225-1 114
o-Tolidine dyes (dyes, benzidine)	NIOSH 5013	LFC		150 (@0.1 mg/m³)-500		1000-3000		varies		HPLC-UV	FLT 225-17P 106 C/HLD 225-1 114 CST 225-3LF 113
m-Tolualdehyde	ASTM D 5197			varies		500-1200		5 min-24 hrs		HPLC-UV	ST 226-120 ○ or ST 226-119 50
o-Tolualdehyde	ASTM D 5197			varies		500-1200		5 min-24 hrs		HPLC-UV	ST 226-120 ○ or ST 226-119 50
p-Tolualdehyde	ASTM D 5197			varies		500-1200		5 min-24 hrs		HPLC-UV	ST 226-120 ○ or ST 226-119 50
Toluene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 CPC 224-26-CPC 37 TH 224-26-02 37
Toluene	Internal					14.5 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-104 96 PS 690-103 or
Toluene	Internal					0.63 ml/min		24 hrs-7 days		TD, GC	PS 690-101 or PS 690-104 with PS 690-103 or RR 690-300 96
Toluene	Internal					14.5 ml/min		8 hrs-30 days		SE, GC	PS 690-105 96
Toluene	OSHA 111	200	300 (C)	12	0.5	50	50	4	10	GC-FID	ST 226-81A 49 ST 226-01 48
Toluene (Hydrocarbons, Aromatic)	NIOSH 1501	100	150	1-8	1-8	10-200	10-200	varies	varies	GC-FID	ST 226-01 48
2,4-Toluene diisocyanate	ASTM D 5836			15		1000		15		HPLC-UV or HPLC-FD	CF/CST 225-9002 68 C/HLD 225-1 114
2,4-Toluene diisocyanate	ASTM D 5932			15		1000		15		HPLC-UV-FD	CF/CST 225-9022 ▼ 68 C/HLD 225-1 114
2,4-Toluene diisocyanate	OSHA 5002		0.02 (C)	240	15	1000	1000	4	15	HPLC-UV or HPLC-FD	CF/CST 225-9002 or CF/CST 225-9022 ▼ 68 CF/CST 225-9013 or C/HLD 225-1 114
2,6-Toluene diisocyanate	ASTM D 5836			15		1000		15		HPLC-UV or HPLC-FD	CF/CST 225-9002 68 C/HLD 225-1 114
2,6-Toluene diisocyanate	ASTM D 5932			15		1000		15		HPLC-UV-FD	CF/CST 225-9022 ▼ 68 C/HLD 225-1 114
2,6-Toluene diisocyanate	OSHA 5002			240		1000		4		HPLC-UV or HPLC-FD	CF/CST 225-9002 or CF/CST 225-9022 ▼ 68 CF/CST 225-9013 or C/HLD 225-1 114
2,4-Toluene diisocyanate (isocyanates)	NIOSH 5521	LFC		480	10	1000	1000	8	10	HPLC-ELCHM & HPLC-UV	IMP 225-36-1 70 IT 225-22 70
2,4-Toluene diisocyanate (isocyanates)	OR-OSHA 1010	0.02	0.005	45	5	1000	1000	45 min	5	HPLC	IMP 225-36-1 70 CF/CST 225-9029 68 IT 225-22 70
2,6-Toluene diisocyanate (isocyanates)	NIOSH 5521	LFC		480		1000		8		HPLC-ELCHM & HPLC-UV	IMP 225-36-1 70 IT 225-22 70
2,6-Toluene diisocyanate (isocyanates)	OR-OSHA 1010	0.02	0.005	45	5	1000	1000	45 min	5	HPLC	IMP 225-36-1 70 CF/CST 225-9029 68 IT 225-22 70
2,4-Toluene diisocyanate (isocyanates, total)	NIOSH 5525	LFC		1-500		1000-2000		varies		HPLC-UV	FLT 225-7 ‡ 108 SP 225-27 or FLT 225-702 ‡ 108 CST IOM 225-4 225-76A 113 120
2,6-Toluene diisocyanate (isocyanates, total)	NIOSH 5525	LFC		1-500		1000-2000		varies		HPLC-UV	FLT 225-7 ‡ 108 SP 225-27 or FLT 225-702 ‡ 108 CST IOM 225-4 225-76A 113 120
p-Toluene sulfonic acid	NIOSH 5043			10-1000		1000-3000		varies	15	HPLC-UV	FLT 225-16 108 CST 225-32 114
Toluene-2,4-diamine	OSHA 65			100		1000		100 min		GC-ECD	CF/CST 225-9004 68 C/HLD 225-1 114
2,4-Toluenediamine	NIOSH 5516	LFC		30 (@10 ug/m³)-500		1000		varies		HPLC-UV	IMP 225-36-1 70 IT 225-22 70
2,4-Toluenediamine	OSHA 65			100		1000		100 min		GC-ECD	CF/CST 225-9004 68 C/HLD 225-1 114
2,6-Toluenediamine	NIOSH 5516	LFC		30 (@10 ug/m³)-500		1000		varies		HPLC-UV	IMP 225-36-1 70 IT 225-22 70
2,6-Toluenediamine	OSHA 65			100		1000		100 min		GC-ECD	CF/CST 225-9004 68 C/HLD 225-1 114
m-Toluidine	OSHA 73			100		1000		100 min		GC-ECD	CF/CST 225-9004 68 C/HLD 225-1 114
o-Toluidine	NIOSH 2017	LFC		5-50		200		25 min-4 hrs		GC-FID	CF/CST 225-9004 68 ST 226-15 48
o-Toluidine	OSHA 73	5		100		1000		100 min		GC-ECD	CF/CST 225-9004 68 C/HLD 225-1 114
p-Toluidine	OSHA 73			100		1000		100 min		GC-ECD	CF/CST 225-9004 68 C/HLD 225-1 114
o-Toluidine (Amines, Aromatic)	NIOSH 2002	LFC		10-150		20-1000		10 min-8 hrs		GC-FID or GC-NSD	ST 226-10 48
Toxaphene *(see chlorinated camphene)*											

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Tremolite *(see asbestos fibers)*	NIOSH 7400										
Tremolite fibers *(see asbestos)*	OSHA ID 160										
Triazine pesticides	ASTM D 4861			960		2000		8		GC-ECD	PUF 226-92 54
Tributyl phosphate	NIOSH 5034	0.2		2 (@0.5 ppm)-100		1000-3000		varies		GC-FPD	F/CST 225-3-01 100 C/HLD 225-1 114
Tributyltin benzoate (tin, organic compounds [as Sn])	OSHA ID 222SG			200		2000		100 min		AA-GF	F/CST 225-803 105 C/HLD 225-1 114
Tributyltin chloride (organotin compounds as Sn)	NIOSH 5504	0.1 mg/m³		480		1000		8		HPLC & AA-GF	ST 226-30 48 C/HLD 225-1 114 F/CST 225-709 108
Tributyltin fluoride (tin, organic compounds [as Sn])	OSHA ID 223SG			200		2000		100 min		AA-GF	F/CST 225-803 105 C/HLD 225-1 114
Tributyltin neodecanoate *(see tin, organic compounds)*											
1,1,2-Trichloro-1,2,2-trifluoroethane	OSHA 113	1000		1		50		20 min		GC-FID	ST NA SKC
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NIOSH 1020	1000	1250	0.1 (@1000 ppm)-3		10-50		varies	15	GC-FID	ST 226-01 48
Trichloroacetic acid	OSHA PV2017			10		200		50		HPLC-UV	ST 226-10 48
1,2,3-Trichlorobenzene	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-124 54
1,2,3-Trichlorobenzene	OSHA in house file			12		200				GC-ECD	F/CST NA SKC ST 226-30-04 48 C/HLD 225-1 114
1,2,4-Trichlorobenzene (polychlorobenzenes)	NIOSH 5517		5	3-12		10-200		varies	15	GC-ECD	FLT Special order CST Special order ST 226-30-04 48 C/HLD 225-1 114
1,1,2-Trichloroethane	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
1,1,2-Trichloroethane	Internal					12.5 ml/min		8-24 hrs		SE, GC	PS 690-105 96
1,1,2-Trichloroethane	OSHA 11	10		10		200		50		GC-FID	ST 226-01 48
1,1,2-Trichloroethane (hydrocarbons, halogenated)	NIOSH 1003	10 (skin)		10		10-200		varies		GC-FID	ST 226-01 48
1,1,1-Trichloroethane (methyl chloroform)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
1,1,1-Trichloroethane (methyl chloroform)	Internal					14.1 ml/min		8-24 hrs		SE, GC	PS 690-105 96
1,1,1-Trichloroethane (methyl chloroform) (hydrocarbons, halogenated)	NIOSH 1003		350		3		10-200		varies	GC-FID	ST 226-01 48
Trichloroethylene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
Trichloroethylene	Internal					14.9 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 96
Trichloroethylene	Internal					14.9 ml/min		8-24 hrs		SE, GC	PS 690-105 96
Trichloroethylene	Internal					0.596 ml/min		24 hrs-7 days		SE, GC	PS 690-105 with RR 690-300 96
Trichloroethylene	NIOSH 1022	25	2 (1 hrs)	1 (@100 ppm)-30		10-200		varies		GC-FID	ST 226-01 48
Trichloroethylene	OSHA 1001	100	200 (C)			14.24		8	5	GC-FID	PS 575-002 82
Trichloroethylene	OSHA 1001	100	200 (C)	12	0.75	50	50	4	5	GC-FID	ST 226-01 48
Trichloroethylene (hydrocarbons, halogenated)	NIOSH 1003			10		10-200		varies		GC-FID	ST 226-01 48
Trichloroethylene by portable GC	NIOSH 3701	25	2 (1 hrs)	varies	varies	20-50	varies	varies	varies	P GC-PID	SB 232 Series 61
Trichlorofluoromethane (fluorotrichloromethane)	NIOSH 1006	1000			0.3-7	10-50		varies		GC-FID	ST 226-09 48
Trichloronitromethane	NON 51	0.1		144		100		24		GC-MSD	ST 226-175 51
2,4,5-Trichlorophenol	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
2,4,5-Trichlorophenoxyacetic acid *(see 2,4,5-T)*											
1,2,3-Trichloropropane	Internal					11.9 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 or PS 690-104 96
1,2,3-Trichloropropane	Internal					11.9 ml/min		8-24 hrs		SE, GC	PS 690-105 96
1,2,3-Trichloropropane (hydrocarbons, halogenated)	NIOSH 1003	10 (skin)		0.6-60		10-200		varies		GC-FID	ST 226-01 48
Tricyclohexyltin hydroxide (organotin compounds as Sn)	NIOSH 5504	0.1 mg/m³		480		1000		8		HPLC & AA-GF	ST 226-30 48 C/HLD 225-1 114 F/CST 225-709 108
Tridymite *(see silica, respirable crystalline)*	OSHA ID 142 (v4)										
Tridymite (Silica, Cystalline (respirable) by XRD)	NIOSH 7500	0.05 mg/m³		400-1000		2500		varies		XRD	F/CST 225-803 105 CYC 225-01-02 125 C/HLD 225-1 114

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞							
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time		
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Tridymite (Silica, Crystalline by IR)	NIOSH 7602	0.05 mg/m³		400-1000 (total dust < 4 mg)		2000-4000		varies		IR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-309 113
Triethanolamine (TEA)	OSHA PV2141			100		1000		100		GC-FID	F/CST 225-709 108 C/HLD 225-1 114
Triethanolamine (TEA) (Aminoethanol Compounds II)	NIOSH 3509			240		1000		4		IC	IMP 225-36-1 70 IT 225-22 70
Triethylamine	OSHA PV2060	25		10-20ψ		100-200		100 min		GC-FID	ST 226-98 50
Triethylene glycol	NIOSH 5523			5-60		500-2000		varies		GC-FID	ST 226-57 49
Triethylenetetramine (TETA)	OSHA 60			10		100		100 min		HPLC-UV	ST 226-30-18 48
Trifluorobromomethane	NIOSH 1017	1000		0.1 (1000 ppm)-1		10-50		2-100 min		GC-FID	ST 226-01 48 ST 226-09 48
Trifluoromonobromomethane (trifluorobromomethane)	NIOSH 1017	1000		0.1 (1000 ppm)-1		10-50		2-100 min		GC-FID	ST 226-01 48 ST 226-09 48
Trifluralin	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
1,3,5-triglycidyl isocyanurate (TGIC)	OSHA 1024			180		1000		3		GC-FID	FLT 225-7 108 CST 225-2LF 113 SP 225-27 115 C/HLD 225-1 114
1,3,5-triglycidyl-s-triazinetrione	OSHA 1024			180		1000		3		GC-FID	FLT 225-7 108 CST 225-2LF 113 SP 225-27 115 C/HLD 225-1 114
Trimellitic anhydride (TMA)	NIOSH 5036	0.005 (10 hrs)		400		1500-2000		3.3-4.4 hrs		GC-FID	F/CST 225-802 105 C/HLD 225-1 114
Trimellitic anhydride (TMA)	OSHA 98			480		2000		4		HPLC-UV	CF/CST 225-9010 68 C/HLD 225-1 114
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	OSHA PV2002			10		100		100 min		GC-FID	ST 226-110 50
Trimethylamine	OSHA PV2060			10-20 ψ		100-200		100 min		GC-FID	ST 226-98 50
1,2,3-Trimethylbenzene	OSHA 1020	25		2.78		11.6		4	15	GC-FID	PS 575-002 82
1,2,3-Trimethylbenzene	OSHA 1020	25		12		50		4		GC-FID	ST 226-01 48
1,2,4-Trimethylbenzene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
1,2,4-Trimethylbenzene	Internal					13.0 ml/min		8-24 hrs		TD, GC	PS 690-101 or PS 690-103 or PS 690-104 96
1,2,4-Trimethylbenzene	Internal					13.0 ml/min		8-24 hrs		SE, GC	PS 690-105 96
1,2,4-Trimethylbenzene	OSHA 1020	25		2.81		11.7		4	15	GC-FID	PS 575-002 82
1,2,4-Trimethylbenzene	OSHA 1020	25		12		50		4		GC-FID	ST 226-01 48
1,3,5-Trimethylbenzene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
1,3,5-Trimethylbenzene (mesitylene)	OSHA 1020	25		2.9		12.1		4	15	GC-FID	PS 575-002 82
1,3,5-Trimethylbenzene (mesitylene)	OSHA 1020	25		12		50		4		GC-FID	ST 226-01 48
Trimethylbenzene	OSHA 5000	25		12		50		4		GC-FID	ST 226-01 48
3,5,5-Trimethylcyclohex-2-enone (isophorone)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
3,5,5-Trimethylcyclohex-2-enone (isophorone)	Internal					11.3 ml/min		0.25-5 hrs		TD, GC	PS 690-101 or PS 690-104 96
Trimethyltin dichloride	NIOSH 5526	0.1 mg/m³		15-75		250-1000		4	60	GC-FPD	ST 226-30-16 48
2,4,7-Trinitrofluoren-9-one	NIOSH 5018			100 (2 µg/m³)-500		1000-3000		varies		HPLC-UV	FLT 225-17-04 106 CST 225-3LF 113 C/HLD 225-1 114
2,4,6-Trinitrotoluene (TNT)	OSHA 44	1.5 mg/m³		60		1000		1		GC-TEA-EAP	ST 226-56 49
Triorthocresyl phosphate	NIOSH 5037	0.1 mg/m³		2 (0.1 mg/m³)-100		1000-3000		varies		GC-FPD	F/CST 225-3-01 100 C/HLD 225-1 114
Triphenyl phosphate	NIOSH 5038	3 mg/m³		10 (3 mg/m³)-400		1000-3000		varies		GC-FPD	F/CST 225-3-01 100 C/HLD 225-1 114
Triphenyl tin chloride (as Sn)	NIOSH 5527	0.1 mg/m³ (skin)		100-2000		1000-4000		varies		HPLC & ICP-AES	FLT 225-5-37-P 105 C/HLD 225-1 114
Triphenyltin hydroxide {tin, organic compounds (as Sn)}	OSHA ID 225SG	0.1 mg/m³		200		2000		100 min		AA-GF	F/CST 225-709 108 C/HLD 225-1 114
Tripropylene glycol diacrylate (TPGDA)	NON 39			480		1000		8		GC-FID	ST 226-56 49
Tuberculosis (mycobacterium tuberculosis), airborne	NIOSH 0900			1920		4000		8		PCR	FLT 225-17-32 106 SP 225-27 115 CST 225-3LF 113 C/HLD 225-1 114
Tungsten & compounds (insoluble) (as W)	OSHA ID 213			480	30	2000	2000	4	15	ICP	F/CST 225-3-01 100 C/HLD 225-1 114
Tungsten & compounds (soluble) (as W)	OSHA ID 213			480	30	2000	2000	4	15	ICP	F/CST 225-3-01 100 C/HLD 225-1 114
Tungsten (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	5 mg/m³	10 mg/m³	Varies		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Tungsten (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	5 mg/m³	10 mg/m³	50-1000	50-1000	1000-4000	1000-4000	varies	varies	ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Tungsten (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	5 mg/m³	10 mg/m³	5-1000	5-1000	1000-4000	1000-4000	varies	varies	ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Tungsten insoluble	NIOSH 7074	5 mg/m³	10 mg/m³	200 (1 mg/m³)-1000		1000-4000		varies ♦		AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Tungsten soluble	NIOSH 7074	1 mg/m³	3 mg/m³	200 (1 mg/m³)-1000		1000-4000		varies ♦		AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Turpentine	NIOSH 1551	100		1 (100 ppm)-10		10-200		varies		GC-FID	ST 226-01 48
n-Undecane	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
n-Undecane (hydrocarbons, BP 36 to 216 C)	NIOSH 1500	2		2		10-50		varies		GC-FID	ST 226-01 48
Uranium (soluble compounds)	OSHA ID 170SG	0.05 mg/m³		240		2000		2		POL	F/CST 225-803 105 C/HLD 225-1 114
Urea pesticides	ASTM D 4861			240-7200		1000-5000		4-24		GC-ECD	PUF 226-92 54
n-Valeraldehyde	ASTM D 5197			varies		500-1200		5 min-24 hrs		HPLC-UV	ST 226-120 or ST 226-119 50
n-Valeraldehyde	NIOSH 2536	50		0.5 (50 ppm)-10		10-40		varies		GC-FID	ST 226-118 50
n-Valeraldehyde	OSHA 85			3		50		1		HPLC-UV	CF/CST 225-9020 68 C/HLD 225-1 114
n-Valeraldehyde (Aldehydes, Screening)	NIOSH 2539	50		5		20		4		GC-FID & GC-MS	ST 226-118 50
Vanadium (Elements by ICP HNO_3 Digestion)	NIOSH 7303		0.05 mg/m³		2.5-500,000		1000-4000		varies	ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Vanadium (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300		0.05 mg/m³		5-2000		1000-4000		varies	ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Vanadium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306		0.05 mg/m³ C (as pentoxide)	Varies		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Vanadium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301		0.05 mg/m³		5-2000		1000-4000		varies	ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Vanadium (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Vanadium fume (as V_2O_5)	OSHA ID 125G	0.05 mg/m³	0.1	480	20	2000	1000	4	20	ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 105 C/HLD 225-1 114
Vanadium oxides	NIOSH 7504		0.05 mg/m³ (15 min)	200-1000		2.2 (HD cyclone) 1.7 (nylon cyclone)		varies		XRD	F/CST 225-803 105 C/HLD 225-1 114 CYC 225-01-02 125
Vanadium pentoxide (V_2O_5) *(see vanadium oxides)*	NIOSH 7504										
Vanadium pentoxide (fume)	OSHA PV2121		0.1 mg/m³ (fume)	960		2000		8		GR	F/CST 225-803 105 C/HLD 225-1 114
Vanadium pentoxide (respirable dust)	OSHA PV2121		0.5 mg/m³ (respirable dust)	960		2000		8		GR	F/CST 225-803 105 C/HLD 225-1 114 CYC 225-105 124
Vanadium respirable dust (as V_2O_5)	OSHA ID 125G		0.5 mg/m³		varies		varies		varies	ICP-AES	F/CST 225-3-01 100 CYC 225-105 124 C/HLD 225-1 114
Vanadium trioxide *(see vanadium oxides)*	NIOSH 7504										
Vermiculite *(see Particulates Not Otherwise Regulated, total and respirable)*											
Vinyl acetate	NON 21			24		50		8		GC	ST 226-68 49
Vinyl acetate	OSHA 51			24	3	100	200	4	15	GC-FID	ST NA SKC
Vinyl bromide	NIOSH 1009	LFC		2-10		10-200		varies		GC-FID	ST 226-09 48
Vinyl bromide	OSHA 08	1	5	5		200		2.5		GC-FID	ST 226-01 48
Vinyl chloride	ASTM D 4766			24		100 or 50		4 or 8		GC-FID	ST 226-16 48
Vinyl chloride	NIOSH 1007	LFC		5		50		1.6		GC-FID	ST 226-01 48
Vinyl cyclohexene dioxide	OSHA PV2083			10		200		50		GC-FID	ST 226-30 48
Vinyl toluene	OSHA 89	100		12	0.75	50		4		GC-FID	ST 226-01 48
Vinyl toluene (methyl styrene)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST 226-300 Series 52 TH 224-26-02 37 CPC 224-26-CPC 37
N-Vinyl-2-pyrrolidinone	OSHA PV2106			10		200		50 min		GC-FID	ST 226-01 48
Vinylidene chloride	NIOSH 1015	LFC		2.5-7		10-200		varies		GC-FID	ST 226-01 48
Vinylidene chloride	OSHA 19			3	3	200	200	15 min	15	GC-FID	ST 226-01 48
Viruses (in air)	NON 48			62.5-375		12,500 +		5-30		varies	BS 225-9595 136 VT 225-9598A 136
VM&P naphtha	OSHA 48			3	3	20	200	2.5	15	GC-FID	ST 226-01 48
VM&P naphtha (naphthas)	NIOSH 1550	350 mg/m³	1800 mg/m³	10	3	20(50)	200	8(3.3)	15	GC-FID	ST 226-01 48

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

		SAMPLING ∞																	
		Agency Standard		Vol. (liter)		Rate (ml/min)		Time											
Chemical Hazard	Agency Reference	TWA (ppm)	C/STEL (ppm)	TWA	C/STEL	TWA	C/STEL	TWA (hrs)	C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number								
Volatile organic compounds (screening)	NIOSH 2549			1-6		10-50		varies		TD, GC-MS	ST	226-330	52						
Volatile organic compounds (VOCs) (sample bag)	EPA 0040					250-1000 ml/min		1-2 hrs		GC-MS	VAC SB	231-939 or 232-939	or	VAC SB	231-940 or 232-01	with	61		
Volatile organic compounds (VOCs) (thermal desorption tube)	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02		37		
VOST (volatile organic sampling train)	EPA 0031			20		1 L/min		20 min		TD, GC-MS	ST	226-134 £	51	ST	Special Order				
Warfarin	NIOSH 5002	0.1 mg/m³		200 (at 0.1 mg/m³) -1000		1-4 L/min		1-8 hrs		HPLC-UV	FLT C/HLD	225-17-01 225-1	106 114	CST	225-2LF		113		
Welding fumes (total particulate)	OSHA ID 125G			480		2000		4		ICP-AES	F/CST F/CST C/HLD	225-3-01 225-803 225-1	or or 114	F/CST F/CST	225-3100 225-8215	or	105		
Wood alcohol (methanol)	NIOSH 2000	200	250	1 (at 200 ppm) to 5	3	20	200	4	15	GC-FID	ST	226-51	49						
Wood dust	OSHA PV2121	15 mg/m³		960		2000		4-8		GR	F/CST	225-802	105	C/HLD	225-1		114		
Wood dust, hardwood	OSHA PV2121	15 mg/m³		960		2000		4-8		GR	F/CST	225-802	105	C/HLD	225-1		114		
Wood dust, softwood	OSHA PV2121	15 mg/m³		960		2000		4-8		GR	F/CST	225-802	105	C/HLD	225-1		114		
Wood spirit (methanol)	NIOSH 2000	200	250	1 (at 200 ppm) to 5	3	20	200	4	15	GC-FID	ST	226-51	49						
m-Xylene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02		37		
m-Xylene	Internal					0.61 ml/min		24 hrs-7 days		TD, GC	PS PS	690-101 690-104	or with	PS RR	690-103 690-300	or	96		
m-Xylene	Internal					12.5 ml/min		8-24 hrs		TD, GC	PS PS	690-101 690-104	or 96	PS	690-103	or			
m-Xylene	Internal					12.5 ml/min		8 hrs-30 days		SE, GC	PS	690-105	96						
m-Xylene	OSHA 1002	100				13.82		8		GC-FID	PS	575-002	82						
o-Xylene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02		37		
o-Xylene	Internal					0.61 ml/min		24 hrs-7 days		TD, GC	PS PS	690-101 690-104	or with	PS RR	690-103 690-300	or	96		
o-Xylene	Internal					11.9 ml/min		8-24 hrs		TD, GC	PS PS	690-101 690-104	or 96	PS	690-103	or			
o-Xylene	Internal					11.9 ml/min		8 hrs-30 days		SE, GC	PS	690-105	96						
o-Xylene	OSHA 1002	100				14.24		8		GC-FID	PS	575-002	82						
p-Xylene	EPA TO-17			1 L & 4 L		16.7 ml/min & 66.7 ml/min		1		TD, GC	ST CPC	226-300 Series 224-26-CPC	52 37	TH	224-26-02		37		
p-Xylene	Internal					12.8 ml ml/ min		8-24 hrs		TD, GC	PS PS	690-101 690-104	or 96	PS	690-103	or			
p-Xylene	Internal					0.61 ml/min		24 hrs-7 days		TD, GC	PS PS	690-101 690-104	or with	PS RR	690-103 690-300	or	96		
p-Xylene	Internal					12.8 ml ml/ min		8 hrs-30 days		SE, GC	PS	690-105	96						
p-Xylene	OSHA 1002	100				13.94		8		GC-FID	PS	575-002	82						
m-Xylene (Hydrocarbons, Aromatic)	NIOSH 1501	100		2-23		10-200		varies		GC-FID	ST	226-01	48						
o-Xylene (Hydrocarbons, Aromatic)	NIOSH 1501	100	150	2-23	2-23	10-200	10-200	varies	varies	GC-FID	ST	226-01	48						
p-Xylene (Hydrocarbons, Aromatic)	NIOSH 1501	100		2-23		10-200		varies		GC-FID	ST	226-01	48						
Xylene (o-, m-, & p-isomers)	OSHA 1002	100		12		50		4		GC-FID	ST	226-01	48						
m-Xylenediamine (mXDA)	OSHA 105			100	15		1000	1.6 hrs	15	HPLC-UV	CF/CST	225-9004	68	C/HLD	225-1		114		
p-Xylenediamine (pXDA)	OSHA 105			100	15		1000	1.6 hrs	15	HPLC-UV	CF/CST	225-9004	68	C/HLD	225-1		114		
2,4-Xylidine (Amines, Aromatic)	NIOSH 2002	2		3-20		20-200		15 min-8 hrs		GC-FID or GC-NSD	ST	226-10	48						
Yttrium	OSHA ID 121	1 mg/m³		960		2000		8		AA or AES	F/CST	225-3-01	100	C/HLD	225-1		114		
Yttrium (Elements by ICP HNO_3 Digestion)	NIOSH 7303			0.1-50,000		1000-4000		varies		ICP-AES	F/CST	225-3-01	100	C/HLD	225-1		114		
Yttrium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	1 mg/m³		1-2000		1000-4000		varies		ICP-AES	SC	225-8517	101	C/HLD	225-1		114		
Yttrium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301			5-1000		1000-4000		varies		ICP-AES	F/CST C/HLD	225-3-01 225-1	or 114	F/CST	225-803		105		

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Yttrium (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300			5-1000		1000-4000		varies		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Yttrium (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Zinc	OSHA ID 121			960		2000		8		AA or AES	F/CST 225-3-01 100 C/HLD 225-1 114
Zinc	OSHA ID 125G			480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 or C/HLD 225-1 114 105
Zinc & compounds (as Zn)	NIOSH 7030	5 mg/m³ (ZnO)	15 mg/m³ (ZnO)	240	30	1000	2000	4	15	AA-F	F/CST 225-3-01 100 C/HLD 225-1 114
Zinc (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	5 mg/m³	15 mg/m³ C (dust) 10 mg/m³ (fume)	Varies		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114
Zinc (Elements by ICP Aqua Regia Ashing)	NIOSH 7301			5-200		1000-4000		varies		ICP-AES	F/CST 225-3-01 or F/CST 225-803 ¥ 105 C/HLD 225-1 114
Zinc (Elements by ICP HNO_3 Digestion)	NIOSH 7303	5 mg/m³ (ZnO)	15 mg/m³ (ZnO)	0.5-10,000	0.5-10,000	1000-4000	1000-4000	varies	varies	ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Zinc (Elements by ICP HNO_3/$HClO_4$ Ashing)	NIOSH 7300	5 mg/m³ (ZnO)	10 mg/m³ (ZnO)	5-200	5-200	1000-4000	1000-4000	varies	varies	ICP-AES	F/CST 225-3-01 or F/CST 225-8408 100 C/HLD 225-1 114
Zinc (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170 TMP 225-2415 170
Zinc bromide *(see Particulates Not Otherwise Regulated, total and respirable)*											
Zinc chloride fume	OSHA ID 121	1 mg/m³		960	30	2000	2000	8	15	AA or AES	F/CST 225-3-01 100 C/HLD 225-1 114
Zinc chloride fume	OSHA ID 125G	1 mg/m³		480	30	2000	2000	4	15	ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 or C/HLD 225-1 114 105
Zinc chromate (CR(VI))	OSHA ID 215 (V2)	0.005 mg/m³		960		2000		8		IC-UV	F/CST 225-802 Ω 105 C/HLD 225-1 114
Zinc chromates (as CrO_3)	OSHA ID 215 (V2)	0.005 mg/m³		960		2000			15	IC-UV	F/CST 225-802 Ω 105 C/HLD 225-1 114
Zinc dibutyldithiocarbamate	OSHA PV2065			180		1000		3		HPLC-UV	ST 226-30-16 48
Zinc oxide	NIOSH 7502	5 mg/m³	15 mg/m³ (15 min)	240	30	1000	2000	4	15	XRD	FLT 225-17-32 106 CST 225-3-23 113
Zinc oxide (Elements by ICP HNO_3 Digestion)	NIOSH 7303	5 mg/m³	15 mg/m³	0.5-10,000	0.5-10,000	1000-4000	1000-4000	varies	varies	ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Zinc oxide (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Zinc oxide (particulates, total)	NIOSH 0500			120		2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Zinc oxide dust (respirable dust)	OSHA PV2121	5 mg/m³		varies		varies		varies		GR	F/CST 225-803 105 C/HLD 225-1 114 CYC 225-105 124
Zinc oxide dust (total dust)	OSHA PV2121	15 mg/m³		960		2000		4-8		GR	F/CST 225-802 105 C/HLD 225-1 114
Zinc oxide fume	OSHA ID 121	5 mg/m³		960	30	2000	2000	8	15	AA or AES	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Zinc oxide fume	OSHA ID 125G	5 mg/m³		480	30	2000	2000	4	15	ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 or C/HLD 225-1 114 105
Zinc oxide fume	OSHA ID 143	5 mg/m³		960	30	2000	2000	8	15	XRD	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Zinc oxide fume (ICP analysis of metal/metalloid particulates from solder operations)	OSHA ID 206	5 mg/m³		480		2000		4		ICP-AES	F/CST 225-3-01 100 C/HLD 225-1 114
Zinc stearate (particulates, respirable)	NIOSH 0600			375		2500		2.5		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CYC 225-01-02 125 CST 225-3LF 113
Zinc stearate (particulates, total)	NIOSH 0500			133		1000-2000		1		GR	FLT 225-5-37-P 105 C/HLD 225-1 114 CST 225-2LF 113
Zinc stearate (respirable dust)	OSHA PV2121	5 mg/m³		varies		varies		varies		GR	F/CST 225-803 105 C/HLD 225-1 114 CYC 225-105 124
Zinc stearate (total dust)	OSHA ID 121	15 mg/m³		960		2000		8		AA or AES	F/CST 225-3-01 100 C/HLD 225-1 114
Zinc stearate (total dust)	OSHA ID 125G	15 mg/m³		480		2000		4		ICP-AES	F/CST 225-3-01 or F/CST 225-3100 or F/CST 225-803 or F/CST 225-8215 or C/HLD 225-1 114 105
Zineb	OSHA 107			500		2000		250 min		HPLC-UV	F/CST 225-3-01 100 C/HLD 225-1 114
Zirconium (Elements by Cellulosic Internal Capsule Sampler)	NIOSH 7306	5 mg/m³	10 mg/m³	1-1000		1000-4000		varies		ICP-AES	SC 225-8517 101 C/HLD 225-1 114

Agency standards for OSHA listings represent the OSHA PELs reported in the 29 CFR 1910.1000 Part 1910, Section 1000.

Abbreviations and references are found on pages 244-245.

Chemical Hazard	Agency Reference	SAMPLING ∞ Agency Standard TWA (ppm)	Agency Standard C/STEL (ppm)	Vol. (liter) TWA	Vol. (liter) C/STEL	Rate (ml/min) TWA	Rate (ml/min) C/STEL	Time TWA (hrs)	Time C/STEL (min)	Analytical Method	SKC Collecting Equipment & Page Number
Zirconium (Elements by ICP Aqua Regia Ashing)	NIOSH 7301	5 mg/m³	10 mg/m³	5-200	5-200	1000-4000	1000-4000	varies	varies	ICP-AES	F/CST 225-3-01 or 114; C/HLD 225-1
Zirconium (Elements by ICP $HNO_3/HClO_4$ Ashing)	NIOSH 7300	5 mg/m³	10 mg/m³	5-200	5-200	1000-4000	1000-4000	varies	varies	ICP-AES	F/CST 225-3-01 or 114; C/HLD 225-1
Zirconium (Elements on Wipes)	NIOSH 9102			wipe						ICP-AES	W 225-2414 170; TMP 225-2415 170
Zirconium compounds (as Zr)	OSHA ID 121	5 mg/m³		960	30	2000	2000	8	15	AA or AES	F/CST 225-803 105; C/HLD 225-1 114

Symbols and Notes

∞ ..... *The sampling parameters shown are suggestions based on the ranges of volume, flow, and time specified in the methods. It is the responsibility of the analyst performing the sampling and analysis to adjust parameters so that the required detection limits can be obtained. It is the responsibility of the user to research published methods to determine validation level and suitability for unique applications.*

C ..... *Ceiling Value*

EL ..... *Excursion Limit*

LFC ..... *NIOSH standard: Lowest Feasible Concentration*

LOQ..... *Limit of Quantitation*

NA SKC ..... *Not available from SKC*

NON ..... *Non-agency reference*

OEL ..... *U.S. Army Occupational Exposure Limit*

OR-OSHA..... *Oregon OSHA method and target concentrations*

PV..... *Provisional Method*

Special order... *Because of limited shelf-life, certain sampling media are available only as special order items.*

** ..... *Optional, use filter if particulates are present*

‡ ..... *Filter or tube must be chemically treated before sampling.*

♠ ..... *Modified procedure or sampler*

◊ ..... *Other collection liquids may be more suited to target microorganisms.*

¥ ..... *This method does not digest PVC filter Cat. No. 225-803 completely.*

Δ ..... *1.0-micron PTFE filter is a NIOSH recommended substitute filter for the 0.8-micron PVC filter originally recommended in NIOSH Method 7904.*

∑ ..... *ACGIH Thoracic TWA. Use PPI for thoracic fraction TWA.*

+ ..... *Sonic flow*

○ ..... *Use sorbent tube Cat. No. 226-120 when sampling in atmospheres containing ozone.*

†† ..... *Special order/limited shelf-life; contact SKC*

▼ ..... *The MOPIP Derivatizing Solution, Cat. No. 225-9050, is needed to analyze for monomer/oligomer aerosol.*

Ω ..... *For sampling in chromium plating operations, PVC filters Cat. No. 225-802 require special treatment after receipt at the laboratory. Alternatively quartz fiber filters Cat. No. 225-1827 treated with NaOH may be used. Refer to the method for details.*

π ..... *SKC recommends the AirChek TOUCH, Essential+, Connect, or XR5000 Sample Pump when using a silica gel sorbent tube with the coated filter at flows above 500 ml/min.*

£..... *Collect six samples at 20 minutes each. Use two Cat. No. 226-134 per sample.*

● ..... *NIOSH Method 5524 analysis requires a Filter Funnel, which is not available from SKC.*

♣ ..... *Refer to the analytical method for target concentrations.*

♦ ..... *Do not exceed 2 mg total dust loading on the filter*

ψ..... *10 L at 0.1 L/min (maximum 20 liters at a flow rate of 0.2 L/min)*

Abbreviations

Analytical Methods

AA	Atomic absorption
AAS	Atomic absorption spectroscopy
AED	Atomic emission detection
AES	Atomic emission spectroscopy
CA	Chromotropic acid assay
CD	Conductivity detection
CI	Colorimetric
CLR	Spectrophotometric method or colorimeter
DET TB	Detector tube, color-indicating
DID	Discharge ionization detector
DPCSP	Differential pulse cathodic stripping polarography
DPP	Differential pulse polarography
DR	Direct-reading
DRI	Direct-reading instrument
EAP	Explosives analysis package
ECD	Electron capture detector
ECN	Electrolytic conductivity detector
EGA-TOS	Evolved gas analysis with thermal-optical sensor
ELCHM	Electrochemical detector
F	Flame
FAME	Fatty acid methyl ester
FD	Fluorescence detector
FID	Flame ionization detector
FLAG	Flame arsine generation
FLUOR	Fluorescence
FPD	Flame photometric detector
FPDS	Flame photometric detector sulfur specific
GC	Gas chromatography
GF	Graphite furnace
GR	Gravimetric analysis
HGA	Heated graphite atomizer
HPLC	High-performance liquid chromatography
HRGC	High resolution gas chromatography
HRMS	High resolution mass spectrometry
IC	Ion chromatography
IC-CD	Ion chromatography detector
ICP	Inductively coupled plasma
ICP-DCP	Inductively coupled plasma-directly coupled plasma spectroscopy
ICP-MS	Inductively coupled plasma-mass spectrometry
IR	Infrared spectrophotometry
IRA	Immunoradiometric assay
ISE	Ion-specific electrode
LC	Liquid chromatography
MAS	Molecular absorption spectometry
MD	Multi-detector
MS	Mass spectrometry
MSD	Mass selective detector
N ACT	Neutron activation
NCD	Nitrogen chemiluminescence detector
NPD	Nitrogen-phosphorus detector
NSD	Nitrogen-specific detector
NVM	No validated method
P FLUOR	Portable fluorescence
P GC	Portable gas chromatography
P IR	Portable infrared spectrophotometry
P IS	Portable infrared spectrophotometer
P VAS	Portable visible absorption spectrophotometry
PASV	Portable anodic stripping voltammetry
PCD	Post-column derivatization
PCM	Phase contrast microscopy
PCR	Polymerase chain reaction
PDA	Photo diode array detector
PES	Plasma emission spectrometry
PID	Photoionization detector
PLM	Polarized light microscopy
POL	Polarography
SCD	Sulfur chemiluminescence detector
SE	Soxhlet extraction
SEM	Scanning electron microscopy
SIM	Selected Ion Monitoring
SPOT	Chemical spot test
TCD	Thermal conductivity detector
TD	Thermal desorption
TEA	Thermal energy analyzer
TEM	Transmission electron microscopy
TITRA	Titration
TOA	Thermal-optical analysis
UV	Ultraviolet detector
VAS	Visible absorption spectrophotometry
VIS	Visual
W	Wipe
XRD	X-ray diffraction
XRF	X-ray fluorescence
XRFS	X-ray fluorescence spectroscopy

Collecting Equipment

AC	Accu-CAP Capsule
BI	Bioaerosol Impactor
BS	BioSampler
C	Capsule
CAL	Calibration Adapter
C/HLD	Filter Cassette and Cyclone Holder
CF/CST	Coated Filter in Preloaded Cassette
CH	Capsule Holder
CI	Cascade Impactor
CPC	Constant Pressure Controller
CST	Filter Cassette
CYC	Cyclone
DR	Direct-reading
DRI	Direct-reading Instrument
DRT	Drying Tube
DT	Detector Tube, Color
EPAM	Environmental Particulate Monitor
F/CST	Filter in Preloaded Cassette
FLT	Filter
FLT/CL	Filter Cassette with Cowl
FOAM	Foam
H/SET	Headset (Face Level)
IMP	Impinger
IOM	IOM Particulate Sampler
IS	Impaction Substrate
IT	Impinger Trap
JAR	Jar
MINI	Mini-Sampler
MVC	Microvacuum Cassette
PPI	Parallel Particle Impactor
PS	Passive Sampler
PT	Plastic Tubing
PUF	PUF Cartridge
RR	Rate Reducer
SB	Sample Bag
SBLK	Bulk Sorbent
SC	Solu-CAP
SCN	Screen
SCRN	Stainless Steel Screen
SH	Sampling Head
SM TB	Smear Tab
SP	Support Pads
SPC	Spacer
SSC	Stainless Steel Cassette
ST	Sorbent Tube
STC	Spore Trap Cassette
SV	Sorbent Vial
T	Tape
TH	Tube Holder
TK	Test Kit
TMP	Template
VAC	Vac-U-Chamber
VT	ViaTrap for BioSampler
W	Wipe

References

SKC Sampling Guides are abstracted from publications by the National Institute of Occupational Safety and Health (NIOSH), the Occupational Safety and Health Administration (OSHA), American Society for Testing and Materials (ASTM) International, the Environmental Protection Agency (EPA), Health and Safety Executive (HSE), and published non-agency methods. The printed version of the Sampling Guides in this catalog (and the references listed below) are current as of the print date of the catalog (typically April of the year of issue). For the most up-to-date information, *visit www.skcinc.com/samplingguides*.

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Air Sampling Terms

8-Hour Time-weighted Average (TWA)

The average full-shift exposure level calculated by weighting concentrations throughout a workday with respect to time. The denominator "eight hours" is used because OSHA standards are based on an 8-hour workday. OSHA and ACGIH use the following formula to calculate TWA:

$$TWA = \frac{C1T1 + C2T2 + C3T3 \ldots CnTn}{8\ hrs}$$

TWA = Time-weighted average concentrations in ppm or mg/m³
C = Concentration of contaminant during an incremental exposure time
T = Time — incremental exposure time

Absorption

The penetration of airborne chemicals into a collection medium, such as impinger fluid, where the chemicals will dissolve or react chemically

Active Sampling

The collection of airborne contaminants by means of a forced movement of air by a sample pump through appropriate collection media

Adsorption

The collection of gases and vapors onto the surface of a collection medium such as the sorbent material in sorbent tubes

Aerodynamic Diameter

A description of the shapes and densities of dust particles; the diameter of a unit-density sphere having the same settling velocity as the particle in question

Aerosol

Microscopic liquid or solid particles dispersed into the air

Air Volume

The total amount of air passed through a sampling medium; determined by multiplying flow rate in ml/min or L/min by the sample time in minutes

Ambient Air

Air that is external to buildings and accessible to the general public

Back Pressure

The pressure drop, i.e., resistance to flow created by the collected sample or the sample media itself

Bioaerosols

Airborne particles, molecules, or volatile compounds ranging in size from 100 microns to 0.01 micron that are living, contain living organisms, or were released from living organisms

Blank Sample

A representative sampling medium sent as a control with the actual sample to a lab. Blanks are subjected to the same procedures as samples, except no air is drawn through them.

Ceiling Value

The concentration that should not be exceeded during any part of the work day

Closed-face Sampling

Filter sampling using a two or three-piece cassette with the cassette inlet section in place and the sealing plugs removed

Constant Flow

A feature available on air sample pumps that allows the pump to automatically compensate for flow restrictions and variations, ensuring the set and verified flow rate is maintained throughout the sampling period

50% Cut-point

Describes the performance of cyclones and other particle size-selective devices. For personal sampling, the 50% cut-point is the size of the dust that the device collects with 50% efficiency.

Cyclone

A sampling device used to collect and separate respirable particulate mass. The cyclone functions as a centrifuge; the rapid circulation of air separates particles according to size.

Desorption Efficiency

A measure of how much analyte can be recovered from sorbent

Dust

Solid particles rendered airborne during the crushing or grinding of hard, rock-like materials

Fugitive Emissions

Emissions that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening

Fume

Solid airborne particles formed by the vaporization of solid materials, oxidation of the vapor, and condensation of the oxide

Gas

A state of matter consisting of molecules in constant random motion that is neither a defined volume nor shape and remains in this state at normal temperature (25 C) and pressure (1 atmosphere)

Grab Sampling

The direct collection of an air-contaminant mixture into a device such as a sample bag or detector tube over a brief period

Gravimetric Analysis

Sample analysis of filters by determining sample weight

Hearing Conservation Program

A program to prevent occupational hearing loss, preserve and protect hearing, and provide workers with knowledge and hearing protection necessary to safeguard themselves.

High Flow Sampling

The collection of airborne contaminants (typically particulates) at flow rates greater than 1000 ml/min

Inhalable Fraction and Vapor (IFV)

An ACGIH endnote designation on a compound that exerts sufficient vapor pressure such that it may be present in both particle and vapor phases, with each contributing a significant portion of the dose at the TLV-TWA concentration. Such compounds require simultaneous sampling of both aerosol and vapor phases.

Indoor Environmental Quality

The impacts of the indoor environment including, but not limited to, air quality, lighting, and temperature on occupant health, comfort, and performance

Integrated Sampling

The collection of air contaminants over an extended period

LEED

The Leadership in Energy and Environmental Design (LEED) program provides building owners/operators with a framework for identifying and implementing practical and measurable green building design, construction, operation, and maintenance solutions.

Low Flow Sampling

The sampling of airborne contaminants (typically gases and vapors) at flow rates less than 500 ml/min

Matched-weight Filters

Two filters that match in weight; the top filter collects contaminants, the bottom filter serves as a control. After sampling, both filters are weighed and the difference between weights is the sample weight.

Mist

Droplets rendered airborne by rubbing, boiling, splashing, or otherwise agitating a liquid

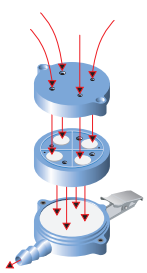
Air Sampling Terms

Nanoparticle
Intentionally manufactured particles of a consistent composition and/or size with at least one dimension in the size range of 1 to 100 nanometers (nm)

Noise Exposure Measurement
Noise is measured using unique instruments such as noise dosimeters and sound level meters to assess areas that are above the occupational exposure limits.

Noise vs Sound
***Noise** is unwanted sound. **Sound** is a rapid variation of atmospheric pressure caused by some disturbance of the air.*

Open-face Sampling
Filter sampling using a three-piece cassette with the cassette inlet section removed; this is typically used for sampling asbestos and other fibers

Parallel Particle Impactor (PPI) Samplers


Small impaction-based particulate samplers that precisely select for thoracic or respirable dust. Comprised of four small impactors arranged in parallel in the inlet plate, each with a unique 50% cut-point to target a specific one-quarter segment of the ISO 7708/CEN curve. Used with a sample pump at 2, 4, or 8 L/min (2 L/min only for thoracic). Larger particles are scrubbed and retained by porous oiled impaction substrate located immediately beneath each inlet nozzle. Smaller particles continue to a standard 37-mm collection filter for analysis.

Particulate Matter (PM)
A mix of solid particles and liquid droplets suspended in air. Origin, shape, size, and composition vary. Standards exist for PM10 (diameter ≤ 10 µm) and PM2.5 (diameter ≤ 2.5 µm) because they are easily trapped in the lungs and are most likely to cause adverse health effects. Additional particles of concern are PM1.0 (diameter ≤ 1 µm) and PM Coarse (diameter < 10 µm and > 2.5 µm).

Passive (Diffusive) Samplers


Small air samplers or "badges" that collect airborne gases or vapors without the use of a pump. Chemicals diffuse through a diffusion barrier onto a sorbing medium inside the sampler at a fixed rate that can be scientifically determined.

Preloaded Filter Cassettes
Ready-to-use cassettes that comprise a cassette, filter, support pad, and sealing plugs

Preweighed Filters
Individual filters that are weighed to within 5 decimals before they are loaded into a cassette

Sampling Parameters — Rate, Time, and Volume
Consult specific methods to determine the range given for each parameter. In the SKC Sampling Guide under "Sampling," some chemicals have two different recommendations for sampling rates and times; the sampling rate for an 8-hour sample is listed with the shorter period rate in parentheses. The choice of rate depends on sampling requirements.

Sampling Train
The entire sampling system: sampling medium (sorbent tube, filter, cyclone, etc.) connected to a sampling pump with flexible tubing

Short-term Exposure Limit (STEL)
A 15-minute time-weighted average exposure that should not be exceeded during any part of the workday

Smoke
Particles resulting from the incomplete combustion of organic matter and consisting predominantly of carbons and oxides of carbon

Solvent Desorption
The process of extracting adsorbed chemicals from sorbent material through the use of solvents

Source Emissions
Particulate or gaseous emissions generated from a stationary source, such as a stack

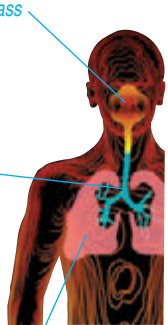
Thermal Desorption
The process of extracting adsorbed chemicals from sorbent material through the use of heat

TLV-TWA
An ACGIH-defined concentration level in air, typically for inhalation or skin exposure, to which it is believed a worker can be exposed day after day (8 hours per day, 40 hours per work week) for a working lifetime without adverse health effects

Traditional Workplace Exposure Guidelines
- *Total Dust*
  Dust that is collected using closed-face 37-mm cassettes fitted with suitable filters
- *Respirable Dust*
  Particles that penetrate to the gas exchange regions of the lung; collected using a filter cassette with suitable filter and a cyclone

Ultrafine Particulate Matter
Ultrafine particles less than 100 nanometers (0.1 micron) result from combustion, friction, or natural processes in the air or water. While nano-sized, ultrafine particles are not nanoparticles because they are neither intentionally manufactured nor of a constant composition or size.

Updated Workplace Exposure Guidelines
The concept of size-selective sampling of industrial aerosol is based on the measurement of particles associated with a specific human health effect, i.e., how deeply particles penetrate into the respiratory tract. ACGIH recommends that particle size-selective threshold limit values (TLVs) be expressed in three forms:



- ***Inhalable** Particulate Mass*
  (100-µm 50% cut-point), hazardous when deposited anywhere in the respiratory tract
- ***Thoracic** Particulate Mass*
  (10-µm 50% cut-point), hazardous when deposited anywhere in the lung airways and the gas exchange regions
- ***Respirable** Particulate Mass*
  (4-µm 50% cut-point), hazardous when deposited in the gas exchange regions of the lungs

Vapor
The gaseous form of a substance that is typically a liquid at normal temperature (25 C) and pressure (1 atmosphere)

Vapor Intrusion
Volatile chemicals in buried wastes and/or contaminated groundwater emit vapors that migrate through subsurface soils into indoor air spaces of overlying buildings.

Whole Air Sampling
The collection of air into a sealable container such as a stainless steel canister or sampling bag for subsequent analysis

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