SKC

THE NEXT GENERATION OF SKC

SAMPLE BAGS

SKC

SKC — A Name That Stands for over 60 Years of Quality Sampling Equipment and Media.

Since 1962, SKC has manufactured quality air sampling equipment and media for occupational and environmental health and safety professionals worldwide. SKC quality products include:

- Sample pumps
- Sorbent tubes
- Sample bags
- Passive samplers
- Size-selective samplers
- Filters

SKC Sample Bags

SKC, the world leader in sampling technologies, produced its first sample bag in the late 1970s. The bag was made of Tedlar® film and soon became the classic sample bag for VOCs. Over the last 30 years, SKC Tedlar bags have been the number one choice of professionals. SKC also introduced new high-performance materials — SamplePro® FlexFilm, and FlexFoil® — the next generation of sample bags. These materials provide new standards of performance for storage stability and background in bag sampling applications.

A Word About Fittings

SKC sample bag fittings are not "off-the-shelf" industrial fittings but are designed specifically for air sampling. SKC quality fittings are offered in a choice of materials including stainless steel, polypropylene, or PTFE that efficiently combine the hose/valve and septum into one lightweight fitting. Dual stainless steel fittings are also available.

SKC Bag Materials and Construction

SKC manufactures its sample bags out of clean top-grade films including SamplePro FlexFilm (SKC proprietary film), FlexFoil and Tedlar. Seams are strong, evenly sealed, and leak tested.

SKC Bag Availability & Price

SKC offers the largest selection of bag materials and sizes.

SKC — The Future in Sample Bags

SKC has been manufacturing quality sample bags for over 30 years and continues to actively research sample bag materials and applications to ensure that the bag you need is available when you need it. OH professionals rely on SKC.

Target the Right Bag Material for Your Application

Tedlar

- Made of classic DuPont Tedlar film for sample integrity and valid data
- Resists gas permeation both into and out of the bag
- Classic bag for VOCs referenced in many EPA methods
- Good stability for some sulphur compounds, including hydrogen sulphide

FlexFoil PLUS

- All the benefits of Standard FlexFoil — PLUS detection and good storage stability for low ppm to high ppb level VOCs
- Specially cleaned for low VOC and sulphur background

Standard FlexFoil

- The only bag that effectively holds hydrogen sulphide for 48 hours!
- Good stability for low molecular weight compounds such as CO, CO_2, methane, hydrogen, and SF_6
- Good 48-hour stability for hydrogen sulphide, hydrogen, carbonyl sulphide, and methyl and ethyl mercaptan
- Light- and moisture-proof

Moderate to high VOC background

Tedlar Air Sample Bags

Referenced in Many EPA Methods

Performance Profile

Background
Moderately low VOC

Stability
Good for VOCs and some sulphur compounds
Good for CO, CO_2, methane, and SF_6

Thickness
2 mil

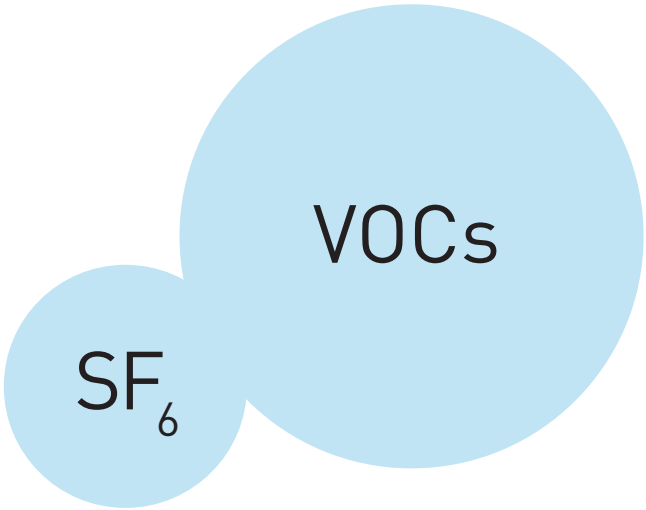
Sample Pump
Pocket Pump Touch

Analysis
Multiple

Select from all-in-one polypropylene fitting or dual stainless steel fittings.

SKC Tedlar bags made of classic DuPont Tedlar film are an industry standard.
The popular SKC all-in-one polypropylene fitting makes bags lighter weight and easier to handle.
SKC also offers Tedlar bags with dual stainless steel fittings.

- Quality DuPont Tedlar film for sample integrity and valid data
- Good stability for VOCs and some sulphur compounds
- Good stability for carbon monoxide, carbon dioxide, methane, and sulphur hexafluoride
- Choice of fittings
  1) Single combined polypropylene hose/valve and septum for economy and light weight
  2) Dual stainless steel for sampling flexibility
- Available in a variety of sizes
- Bag available for EPA TCLP method
- Custom bags available



Stability of VOCs in Tedlar Bags

Acceptability criteria: ⩾ 80% recovery at ⩾ 2 days based on EPA Method 0040
as tested in SKC Laboratories

Compound	% Recovery	
	Day 1	Day 2
Acetone	99.0	95.0
Acetonitrile	74.0	66.0
Acrylonitrile	90.0	80.0
Allyl chloride	102.0	94.0
Benzene	104.0	98.0
Bromoethane	99.0	100.0
1,3-Butadiene	99.0	95.0
Butane	98.0	94.0
Butyl acetate	104.0	102.0
Carbon tetrachloride	104.0	102.0
Chloroform	98.0	95.0
1,2-Dichloroethane	100.0	97.0
Dichloropropane	105.0	101.0
Ethyl acetate	98.0	96.0
Ethylene	100.0	102.0
Heptane	100.0	100.0

Compound	% Recovery	
	Day 1	Day 2
Hexane	101.0	101.0
Isooctane	100.0	97.0
Isopropyl alcohol	101.0	99.0
Methyl ethyl ketone	99.0	98.0
Methyl-t-butyl ether	101.0	101.0
Methylene chloride	102.0	97.0
Octane	100.0	97.0
Perchloroethylene	105.0	94.0
Propylene	103.0	104.0
Propylene oxide	96.0	95.0
Tetrahydrofuran	103.0	100.0
Toluene	96.0	92.0
1,1,1-Trichloroethane	104.0	101.0
Trichloroethylene	104.0	103.0
Vinylidene chloride	102.0	100.0
p-Xylene	89.0	83.0

Tedlar Bags with Single Polypropylene Fitting

Maximum Capacity (litre)	Part No.	Pack Size.	Fitting
0.5	232-02	10	
0.7 (Fits Vac-U-Tube 231-945)	232-945A	10	
1	232-01	10	
3	232-03	10	
5	232-05	10	
8 (Fits large Vac-U-Chamber 231-939)	232-939	10	
10	232-10	10	
25	232-25	5	
50	232-50	5	
75	232-75	5	
100	232-100	3	
Replacement Septa	232-01-RS	10	

Tedlar Bags with Dual Stainless Steel Fittings

Maximum Capacity (litre)	Part No.	Pack Size.	Fitting
1	231-01	10	
3	231-03	10	
5	231-05	10	
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	

Tedlar Bag with Single Stainless Steel Septum Fitting (attaches to ZHE)

Description	Part No.	Pack Size.	Fitting
Tedlar Sample Bag, 1 litre, with single stainless steel septum fitting suitable for attaching directly to Zero Headspace Extractor (ZHE) with stainless steel adapter, required	231-01-TCLP	10	
Stainless Steel Adapter, for use with ZHE, required	231-01-ZHE	ea	

Tech Tips

Q: Can Tedlar Bags be used at elevated temperatures?

A: SKC Tedlar film has a melting point of 374°F (190°C). However, the bag fitting dictates the maximum operating temperature of the sample bag.

Tedlar bags with stainless steel fittings have a maximum operating temperature of 225°F (107.2°C) based on the temperature tolerances of this fitting's O-rings.

Tedlar bags with polypropylene fittings have a maximum operating temperature of 200°F (93.3°C) based on the temperature tolerance of the fitting material. Strain on the fitting should be avoided at the maximum temperature.

More Information

SKC Bag Stability Report –
http://www.skcltd.com/index.php/knowledge-library/reports-and-studies

FlexFoil PLUS Gas Sample Bags

Specially Cleaned for Low ppm to High ppb Level VOCs

Select from all-in-one polypropylene or stainless steel fitting or breath gas fitting.

Performance Profile

Background
Low VOC and sulphur (specially cleaned)

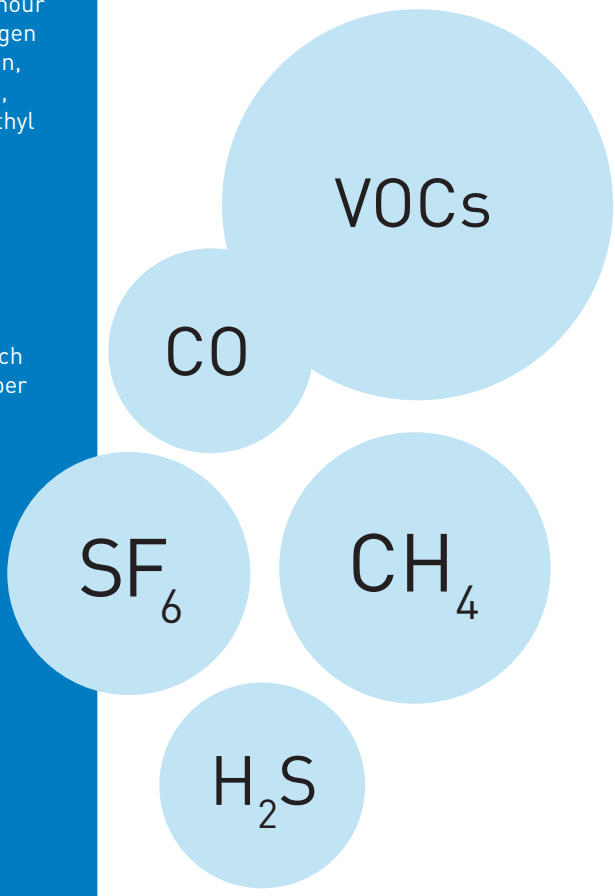
Stability
Good for low ppm to high ppb level VOCs Good for CO, CO_2, methane, hydrogen, and SF_6 Good 48-hour stability for hydrogen sulphide, hydrogen, carbonyl sulphide, and methyl and ethyl mercaptan

Thickness
4 ply (5 mil)

Sample Pumps

Pocket Pump Touch and Vac-U-Chamber

- All the benefits of standard FlexFoil — PLUS detection and good storage stability for low ppm to high ppb level VOCs
- Low VOC and sulphur backgrounds
- Good stability for low molecular weight compounds such as CO, CO_2, methane, hydrogen, and SF_6
- Good 48-hour stability for hydrogen sulphide, carbonyl sulphide, and methyl and ethyl mercaptan
- Strong, flexible, evenly sealed 4-ply (5-mil) material
- Light and moisture-proof - Excellent for light-sensitive compunds
- Choice of all-in-one polypropylene or stainless steel hose/valve and septum fittings
- Stocked in a variety of sizes; custom bags available



Storage Stability of Collected Compounds in FlexFoil PLUS Bags

Acceptability criteria: ≥ 80% recovery at ≥ 2 days based on EPA Method 0040 as tested in SKC Laboratories

Compound	% Recovery	
	Day 1	Day 2
Acetone	99.0	97.8
Acetonitrile	94.2	84.5
Acrylonitrile	98.2	99.5
Allyl chloride	98.5	95.6
Ammonia	16.0	8.0
Benzene	93.1	98.2
Bromoethane	95.2	98.0
1,3-Butadiene	89.0	92.0
Butane	86.0	88.0
Butyl acetate	88.1	88.7
n-Butyl mercaptan‡	47.8	50.0
tert-Butyl mercaptan	91.4	98.8
Carbon dioxide	99.0	100.0
Carbon disulphide‡	58.9	54.4
Carbon monoxide	100.0	100.0
Carbon tetrachloride	99.1	95.0
Carbonyl sulphide	98.9*	108.0*
Chloroform	96.2	97.1
1,2-Dichloroethane	92.0	88.0
Dichloropropane	99.3	98.5
Diethyl disulphide‡	11.1	12.2
Diethyl sulphide‡	25.6	13.3
Dimethyl disulphide‡	42.2	44.4
Dimethyl sulphide	81.4	74.4
2,5-Dimethylthiophene‡	14.0	15.5
Ethyl acetate	100.0	97.3
Ethyl mercaptan	92.1	97.8
Ethyl methyl sulphide‡	52.2	40.0
Ethylene	108.0	94.0
2-Ethylthiophene‡	17.8	17.8
Heptane	99.2	101.0
Hexane	95.8	99.4
Hydrogen sulphide	104.0	102.0
Isobutyl mercaptan‡	62.2	64.4
Isooctane	87.5	86.1
Isopropyl alcohol	101.0	100.0
Isopropyl mercaptan	92.9	98.8
Methane	99.0	100.0
Methyl ethyl ketone (2-Butanone)	96.5	101.0
Methyl mercaptan	93.4	102.0
Methylene chloride	98.7	101.0
3-Methylthiophene‡	32.0	32.0
Methyl tert-butyl ether	92.0	88.0
Octane	98.4	93.1
Perchloroethylene	85.3	82.4
n-Propyl mercaptan	77.8	82.2
Propylene	98.6	97.9
Propylene oxide	102.0	101.0
Sulphur hexafluoride	98.1	93.2
Tetrahydrofuran	101.0	99.3
Tetrahydrothiophene‡	0.0	0.0
Thiophene‡	61.1	62.2
Toluene	90.5	91.5
1,1,1-Trichloroethane	86.5	84.6
Trichloroethylene	93.7	94.6
Vinylidene chloride	98.3	99.5
p-Xylene	97.0	89.0

‡ Sample degradation begins within 3 hours; compound should be analysed as soon as possible or use alternative method.
§ Polypropylene and stainless steel fittings were used in this study.
* Blank corrected

FlexFoil PLUS Bags with Single Polypropylene Fitting

Maximum Capacity (litre)	Part No.	Pack Size.	Fitting
1	252-01	10	
3	252-03	10	
5	252-05	10	
8 (Fits large Vac-U-Chamber 231-939)	252-08	10	
10	252-10	10	
25	252-25	5	
50	252-50	5	
Replacement Septa	236-01-RS	10	

FlexFoil PLUS Bags with Single Stainless Steel Fitting

Maximum Capacity (litre)	Part No.	Pack Size.	Fitting
1	253-01	10	
3	253-03	10	
5	253-05	10	
10	253-10	10	
25	253-25	5	
50	253-50	5	
Replacement Septa	233-01-RS	10	

About

FlexFoil Bag Applications

- Biogas and landfill gas (LFG) sampling
- CO2 - OSHA Method ID-172
- CO2 - NIOSH 6603
- CO - OSHA ID-210#
- Sulphur compounds
- VOCs* (FlexFoil PLUS only)
- Pollution level monitoring
- Site sampling/mobile surveys
- Breath analysis* (FlexFoil PLUS only)
- Calibration gas transfer
- Calibration mixtures
- Leak/spill exposure assessment
- Indoor air studies (CO, CO2, SF6)

Method specifies 5-layer foil bags. SKC 4-ply FlexFoil PLUS bags hold 100 ppm CO for 5 days without loss.

* Use FlexFoil PLUS sample bags when sampling VOCs. FlexFoil PLUS is specially cleaned for low-level (ppb) VOC detection and ideal for breath-gas analysis.

Select a Fitting

SKC sample bags are stocked with a choice of fittings to meet your applications. SKC bag fittings are not "off-the-shelf" industrial fittings but are designed specifically for air sampling. Choose from SKC quality fittings including dual stainless steel or all-in-one single polypropylene, stainless steel, or PTFE fittings that combine the hose/valve and septum into one lightweight fitting.

Standard FlexFoil Gas Sample Bags

Economical Bag for Sulphur Compounds and Low Molecular Weight Gases

Select from all-in-one polypropylene or stainless steel fitting.

Performance Profile

Background
Moderate to high VOC and low sulphur

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

Thickness
4 ply (5 mil)

Sample Pump
Pocket Pump Touch, see p.12

H_2S

SKC Standard FlexFoil sample bags are the economical choice for sampling sulphur compounds and low molecular weight gases. The strong, evenly-sealed 4-ply (5-mil) material even retains hydrogen sulphide for 48 hours! SKC's quality all-in-one hose/valve and septum fitting design is available in polypropylene or stainless steel for Standard FlexFoil sample bags.

- Effectively retains hydrogen sulphide for 48 hours!
- Good stability for low molecular weight compounds such as CO, CO_2, methane, hydrogen, and SF_6
- Good 48-hour stability for hydrogen sulphide, carbonyl sulphide, and methyl and ethyl mercaptan
- Strong, flexible, evenly sealed 4-ply (5-mil) material
- Light and moisture-proof - Excellent for light-sensitive compunds
- Choice of all-in-one polypropylene or stainless steel hose/valve and septum fittings
- Stocked in a variety of sizes; custom bags available

Standard FlexFoil Bags with Single Polypropylene Fitting

Maximum Capacity (litre)	Part No.	Pack Size.	Fitting
1	262-01	10	
3	262-03	10	
5	262-05	10	
8 (Fits large Vac-U-Chamber 231-939)	262-08	10	
10	262-10	10	
25	262-25	5	
50	262-50	5	
Replacement Septa	236-01-RS	10	

Standard FlexFoil Bags with Single Stainless Steel Fitting

Maximum Capacity (litre)	Part No.	Pack Size.	Fitting
1	263-01	10	
3	263-03	10	
5	263-05	10	
10	263-10	10	
25	263-25	5	
50	263-50	5	
Replacement Septa	233-01-RS	10	

CUSTOM
AIR SAMPLE BAGS MADE TO YOUR SPECIFICATIONS

Need a special bag size?

SKC provides multiple-cell sample bags in the size you need.

Need a specific combination of fitting and bag material?

SKC offers a wide choice of fittings and bag materials that can be combined to your specifications.

Fittings:
- Stainless Steel
- Polypropylene
- Nickel-plated brass
- PTFE
- PVC

Sample bag materials:
- SamplePro FlexFilm (3 mil)
- FluoroFilm FEP (2 mil)
- 4-ply FlexFoil – Standard or PLUS (5 mil)
- Tedlar (2 mil)

SKC custom sample bags are proven performers!


Indoor air


Biogas/landfill gas sampling


Soil vapour


Beverage testing

Contact SKC today for your custom sample bags.

www.skcltd.com

PTFE Tubing

Inert Tubing for Bag Sampling

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.

- Heat and corrosion resistant
- Chemically inert
- Strong

PTFE Tubing	Part No.	Length
Fits over all SKC bag fittings 3/16-inch ID, 1/4-inch OD	231-9-23	3m
Fits inside bag fitting 1/16-inch ID, 1/8-inch OD	231-9-21	3m
Fits Vac-U-Chamber sample inlet and 222 pump fittings 1/4-inch ID, 5/16-inch OD	231-937 231-924	3m 15m
Twin Port Pocket Pump Tubing Adapter Kit Includes two lengths of silicone tubing: 1/8-inch ID, 1/4-inch OD for bag fitting and 3/16-inch ID, 3/8-inch OD for pump fitting; use with PTFE tubing (Part No. 231-9-23 above)	231-926	

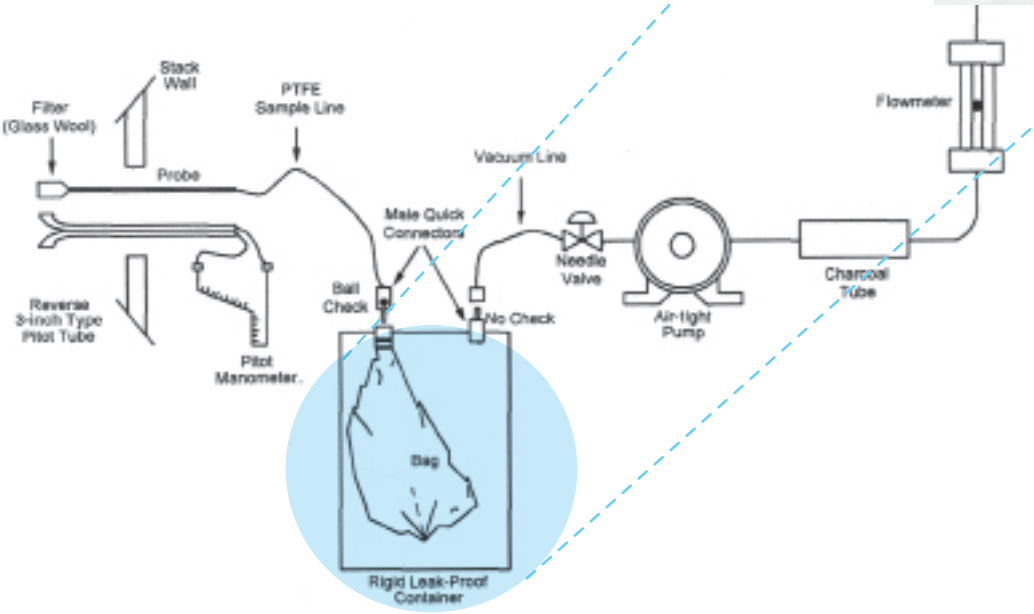
Tech Tips

- Use only PTFE tubing for bag sampling to prevent sample loss through adsorption to the tubing's inner surface.

Vac-U-Chamber

Negative Pressure Lung-style Sampler

- Fills air sample bags directly
  Designed to contain SKC sample bags
- Rugged and airtight
  Will not collapse under vacuum
- Multiple sizes available
  Large for sample volumes up to 8 litres
  Small for sample volumes up to 1 litre
  Larger sizes available for EPA Method 0040
- Protects from contamination
  Sample does not pass through the pump
  Sample contacts only inert tubing and bag
- Sample line extends from contaminant source through case to bag



Integrated Bag Sampling Train

Applications

- U.S. EPA Method 18 (VOCs — industrial sources)
- U.S. EPA Method 0040 (POHCs — stationary sources)
- Soil gas/vapour sampling
  U.S. EPA SOP #2042
  ASTM D5314-92 (2006)
- Indoor air remediation system monitoring petroleum constituents (U.S. EPA SOPs #2102, 2103, and 2104)
- Groundwater testing
- Stack sampling
- Ventilation studies
- Hazardous Material testing

Large Vac-U-Chamber

Description	Part No.
Complete Vac-U-Chamber Kit includes 224-PCMTX8 sample pump, single charger (Part No: 223-203A) with cable, large Vac-U-Chamber, and 10 SamplePro Tedlar sample bags (Part No. 232-10) 100-240 V	224-4115
Large Vac-U-Chamber only with stainless steel fittings (supplied without pump), suitable for use with SKC 8-litre sample bags below	231-939
8-litre Sample Bag with single polypropylene fitting, for use with large Vac-U-Chamber (Part No. 232-10), pk/10	232-939

Small Vac-U-Chamber

Description	Part No.
Complete Vac-U-Chamber Kit includes 224-PCMTX8 sample pump, single charger (Part No: 223-203A), small Vac-U-Chamber, and 10 Tedlar sample bags (Part No. 232-10) 100-240 V	224-4124
Small Vac-U-Chamber only with polypropylene fittings (supplied without pump), suitable for use with 1-litre sample bags below	231-940
1-litre Sample Bag with single polypropylene fitting, for use with small Vac-U-Chamber (Part No. 231-940), pk/10	232-01

Larger sizes are available; contact SKC!

Pocket Pump Touch- 20 to 500ml/min

- Intuitive touch screen operation and calibration

- Constant flows from 20 to 500 ml/min
- Accomodates typical flow rates for sorbent tunes
- Constant pressure from 1.87 to 37.4 mm Hg

- Bluetooth wireless connectivity with PC and DataTrac Pro Software
- Magnetic charging connector
- Constant battery status display

- Powerful Li-Ion battery for > 20 hour run times
- Power-saving auto dim and low energy Bluetooth features
- Extended run times with USB/charger

- Only 235g (8.3 oz)

- Multi-tube sampling - save time and use fewer pumps
- Sample with up to four tubes simultaneously

- Automatic flow fault and restart
- Secure screen during sampling with auto-lock feature
- CE marked and RoHS compliant

Description	Part No:
Pocket Pump TOUCH 20-500 ml/min with Li-Ion battery and mini tool kit. Requires a charger, see below	220-1000TC
Pocket Pump TOUCH Single Pump Vapour Kit includes pump, single charger, single low-flow Tube Holder with Type A cover, Tube Breaker, mini tool kit, Basic Step by Step Guide and carry case.	220-1000TCKV
Pocket Pump TOUCH 5 Pump Vapour Kit includes 5 pumps as described above, 5 USB charging cables, one 5-port USB charging hub with power cable, 5 x single low-flow Tube Holders with Type A covers, Tube Breaker, 5 x mini tool kits, 3 x Basic Step by Step Guides in a carry case.	220-1000TCK5V
Accessories	**Part No:**
Single Charger comprises a mains adapter with a USB output and USB charging cable	220-300A
Five-port USB Hub for Pocket Pump TOUCH Chargers	220-400
USB Charging Cable	P75739
Quick-connect Bag Sampling Adapter	220-200
DataTrac Pro USB Bluetooth Adapter	877-94

SKC Limited 11 Sunrise Business Park
Higher Shaftesbury Road
Blandford Forum, Dorset DT11 8ST

Tel: 01258 480188
W: www.skcltd.com
E: enquiries@skcltd.com

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