SAMPLING SOLUTIONS

For Semiconductor Wafer Fabrication Unit (Fab) Workplaces

Recognition

Semiconductors are formed on wafers in wafer fabrication units called "fabs." In the processes required to build the semiconductors and clean the fab, workers may be exposed to several hazardous chemical agents. According to OSHA,[1] in the past 60 years the semiconductors industry has expanded greatly. Due to this expansion, manufacturing processes and the associated hazards may change. These changes make it difficult to perform hazard assessments.

As of today, the common hazards may include exposure to solvents, acids, caustic solutions, metal particulates, and radiation.

SKC offers active and passive sampling solutions for sampling these compounds. SKC active samplers require an air sample pump to collect hazardous gases, vapors, and particulates in air; passive samplers collect hazardous vapours by diffusion without the use of an air sample pump.

See the SKC equipment recommended for sampling compounds in fab workplaces.

Evaluation with SKC Sampling Solutions

For over 60 years, SKC has led the research, design, and manufacture of quality sampling equipment and media to aid health and safety professionals in the evaluation of occupational and environmental hazards.

Choose from the many SKC sampling solutions for fab workplaces, ranging from air sample pumps, active and passive samplers, sorbent tubes, and filter cassettes to innovative portable instruments following agency methods and established protocols.

See reverse side for specific method and sampling equipment/media information.

Notice: This publication is intended for general information only and should not be used as a substitute for reviewing applicable government regulations, equipment operating instructions, or legal standards. The information contained in this document should not be construed as legal advice or opinion nor as a final authority on legal or regulatory procedures.

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Sample Collection

Active Air Sampling Solutions

Note: When using a sorbent tube with an AirChek® Touch Series pump, a low flow tube holder is required.

Target Compound	Select Methods*	SKC Sample Collection Media and Cat. No.	SKC Sample Pump and Cat. No.	Notes
Arsenic	NIOSH 7900 NIOSH 7303 NIOSH 7301	Preloaded filter cassette 225-3-01	AirChek TOUCH, Essential, Essential+, Connect	
	NIOSH 7306	Solu-CAP MCE filters preloaded in cassettes 225-8517		
Volatile acids (hydrogen chloride, hydrogen bromide, nitric acid)	NIOSH 7907	Coated filter in preloaded cassette 225-9032		
Acid mists (hydrogen bromide, nitric acid, phosphoric acid, sulfuric acid)	NIOSH 7908	Coated filter in preloaded cassette 225-9033		
	OSHA ID 165SG	Sorbent tube 226-10-03	Pocket Pump TOUCH 220-1000TC	
Gallium	NIOSH 7303 OSHA ID 113	Preloaded filter cassette 225-3-01	AirChek TOUCH, Essential, Essential+, Connect	
Hydrogen fluoride (hydrofluoric acid), particulates, fluorides	NIOSH 7906	Preloaded coated filter cassette 225-9031		
Metal particulates	NIOSH 7300 OSHA ID 121 OSHA ID 125G	Preloaded MCE filter cassette 225-3-01	AirChek TOUCH, Essential, Essential+, Connect	
	NIOSH 7306	Preloaded Solu-CAP cassette insert 225-8517		
Organic compounds (including methanol)	OSHA 5001	Sorbent tube 226-82	Pocket Pump TOUCH 220-1000TC	
	OSHA 5000	Sorbent tube 226-01	Pocket Pump TOUCH 220-1000TC	

* Other methods may apply.

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Passive Air Sampling Solutions

Target Compound	Select Methods*/ SKC Validation	SKC Sample Collection Media and Cat. No.	Notes
Organic compounds	EPA TO-17/ Research Report 1812	ULTRA® 690 Series, choice of four sorbents	Thermal desorption and GC analysis
	Research Reports 1812 and 1895 *Refer to the analytical laboratory for modified methods using passive samplers.*	VOC Chek® 575 Series	Solvent extraction and GC analysis

* Other methods may apply. SKC recommends those listed.

[1] https://www.osha.gov/semiconductors

Publication 1702 Rev 260216

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