

# Coated Filters in Preloaded Cassettes

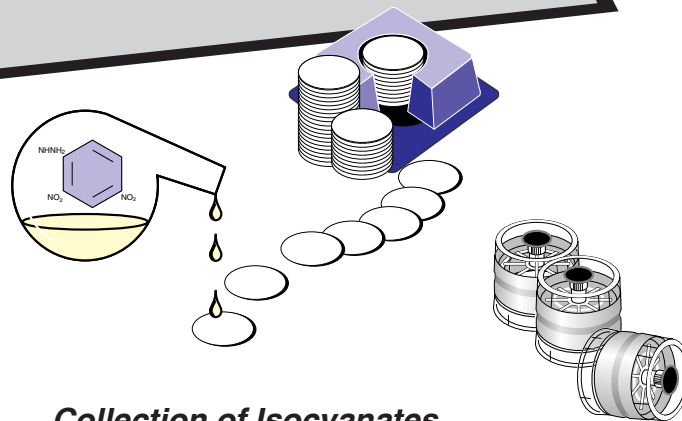
- **Economical**
- **No assembly required**
  - Preloaded into cassettes with end plugs and shrink bands
- **Ready to use**
- **Time-saving**
- **Convenient alternative to impinger wet chemistry methods**
- **No cumbersome collection liquids or glass**
- **Easy personal sampling**
- **Meet agency method specifications**
- **Small package size for short shelf-life product**
- **Custom coated filters available**

## Development and Application

SKC Coated Filters make sampling reactive compounds fast, easy, and safe. Coated filters are treated with a method-specified derivatization reagent and loaded into filter cassettes. Using coated filters makes sampling reactive compounds faster, easier, and safer as there are no liquids to evaporate or spill or glass to break. Because filter cassettes are small and lightweight, they allow convenient personal sampling. Simply unplug the lightweight cassette, insert it into an SKC Filter Cassette Holder, and clip to a worker's collar. Use coated filters to collect compounds that exist as an aerosol or mist or for some higher boiling vapors. Flow rates typically are greater than 1 L/min and sampling times range from 15 minutes to one hour. Most coated filter samples are extracted in solvents and analyzed at a lab by gas or liquid chromatography. SKC offers treated and coated filters to meet a variety of OSHA, NIOSH, ASTM, and international agency methods (see *Coated Filter Selection Guide*).

## SKC Limited Warranty and Return Policy

SKC products are subject to the SKC Limited Warranty and Return Policy, which provides SKC's sole liability and the buyer's exclusive remedy. To view the complete SKC Limited Warranty and Return Policy, go to <http://www.skcinc.com/warranty.asp>.



## Collection of Isocyanates

SKC offers two coated filters with different loading levels for collecting isocyanates using OSHA Method 42 or 47. OSHA's National Emphasis Program (NEP) has also determined a standard operating procedure for isocyanate sampling, field extraction, and sample shipment protocol (listed in OSHA Directive CPL 03-00-017).

**Filter Cat. No. 225-9013** contains a 1.0-mg loading of 1-(2-pyridyl) piperazine (1-2 PP) with a three-month freezer shelf-life. This filter is appropriate for both OSHA methods.

**Filter Cat. No. 225-9002** contains a 2.0-mg loading of 1-2 PP. The excess reagent on the Cat. No. 225-9002 filter increases sample stability and freezer shelf-life to six months. The excess reagent may present analytical problems during derivative separation. This filter traps both vapor and aerosol phases. Coated Filter Cat. No. 225-9002 can be used for both OSHA methods.

## ISO-CHEK Isocyanate Sampling System

Suitable for most isocyanates, the patented\* ISO-CHEK® 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 treated with 9-(N-methylaminomethyl) anthracene (MAMA) reagent that is highly stable to minimize storage and handling requirements. See ordering information on page 2. For more information, go to [www.skcinc.com/instructions/1637.pdf](http://www.skcinc.com/instructions/1637.pdf).

## Collection of Sulfur Dioxide

SKC Filter Cat. No. 225-9005 is a modification of NIOSH 6004. This single 3-piece cassette replaces two 2-piece cassettes in series following the 1993 NIOSH revisions. Reference: Lorberau, C., "Determination of Gaseous and Particulate Fluorides by Ion Chromatographic Analysis," *Appl. Occup. and Env. Hyg.*, 8, (9), 1993, pp. 775-784.

♣ U.S. Patent No. 4,961,916



# Coated Filters in Preloaded Cassettes

## Coated Filter Selection Guide

Chemical	Method <sup>ac</sup>	Filter; Coating Preloaded in Cassettes (37-mm)	Cassette with shrink bands	Cat. No.*	Qty.
Acetic anhydride	OSHA 82	2 Glass filters; 1-(2-pyridyl) piperazine	4-piece, 37 mm	225-9009 <sup>§</sup>	10
Acetic anhydride	OSHA 102	2 Glass filters; veratrylamine and di-n-octyl phthalate	4-piece, 37 mm	225-9010 <sup>†</sup>	10
4-Aminobiphenyl	OSHA 93	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10
Aniline	NIOSH 2017 <sup>‡</sup>	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004 <sup>‡</sup>	10
Arsenic, volatile compounds	OSHA ID-105	1 MCE filter and cellulose pad; sodium carbonate	3-piece, 37 mm	225-9001	10
Benzidine	OSHA 65	2 Glass filters; sulfuric acid	3-piece, 37 mm	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)	3-piece, 25 mm	225-9006	5
Crotonaldehyde	OSHA 81	2 Glass filters; 2,4-dinitrophenylhydrazine and phosphoric acid	3-piece, 37 mm	225-9019 <sup>§</sup>	10
o-Dianisidine	OSHA 71	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10
3,3'-Dichlorobenzidine	OSHA 65	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10
Diisocyanates (HDI; 2,6-TDI; 2,4-TDI)	ASTM D5836 <sup>Δ</sup> OSHA 42 <sup>‡</sup>	1 Glass filter and cellulose support; 1-(2-pyridyl) piperazine <sup>‡</sup>	3-piece, 37 mm	225-9013 <sup>§†</sup> 225-9002 <sup>§§</sup>	10
Diphenylamine	OSHA 78	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10
Fluorides	OSHA ID-110 NIOSH 7902 ASTM D4765	1 MCE filter and cellulose pad; sodium carbonate	3-piece, 37 mm	225-9001 <sup>‡</sup>	10
Fluorides, particulate	NIOSH 7906	2 Nitrocellulose filters; 1 coated with sodium carbonate, 1 uncoated	3-piece, 37 mm	225-9031	10
Glutaraldehyde	OSHA 64	2 Glass filters; 2,4-dinitrophenylhydrazine and phosphoric acid	4-piece, 37 mm	225-9003 <sup>§</sup>	10
Hydrazine	OSHA 108	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9012	10
Hydrofluoric acid - <b>New!</b>	NIOSH 7906	2 Nitrocellulose filters; 1 coated with sodium carbonate, 1 uncoated	3-piece, 37 mm	225-9031	10
Hydrogen bromide - <b>New!</b>	NIOSH 7907	2 Quartz filters; 1 coated with sodium carbonate, 1 uncoated	3-piece, 37 mm	225-9032	10
Hydrogen chloride - <b>New!</b>	NIOSH 7907	2 Quartz filters; 1 coated with sodium carbonate, 1 uncoated	3-piece, 37 mm	225-9032	10
Hydrogen peroxide	NON 57 <sup>•</sup>	2 25-mm Quartz filters; titanium oxysulfate hydrate (in 25-mm cassette)	3-piece, 37 mm	225-9030 <sup>•</sup>	10
Isocyanates	ASTM <sup>Σ</sup>	1 PTFE filter; 1 Glass filter treated with MAMA	3-piece, 37 mm	225-9022 <sup>Σ</sup> 225-9022A <sup>Σ</sup>	12 36
Isocyanates (HDI, MDI, TDI, IPDI, HDI-BT, HDI-IC)	Oregon-OSHA 1010 <sup>▼</sup>	1 13-mm Glass filter; MAMA (in 13-mm Swinnex holder) <sup>§</sup>	2-piece, 13 mm Swinnex	225-9029 <sup>§▼</sup>	5
Isocyanates (HDI; 2,6-TDI; 2,4-TDI)	ASTM D5836 <sup>Δ</sup> OSHA 42 <sup>‡</sup>	1 Glass filter and cellulose support; 1-(2-pyridyl) piperazine <sup>‡</sup>	3-piece, 37 mm	225-9013 <sup>§†</sup> 225-9002 <sup>§§</sup>	10
Isocyanates, organic	MDHS 25/3 (U.K.)	1 25-mm AE Glass filter; methoxyphenyl piperazine <sup>◊</sup>	3-piece, 37 mm	225-9011 <sup>§§</sup>	5
n-Isopropylaniline	OSHA 78	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10
Maleic anhydride	OSHA 86	2 Glass filters; veratrylamine	3-piece, 37 mm	225-9021 <sup>§</sup>	10
Maleic anhydride	■	1 25-mm Glass filter; veratrylamine <sup>∞§</sup>	3-piece, 37 mm	225-9028 <sup>∞§</sup>	10
Mercaptans (methyl-, ethyl-, n-butyl-, and phenyl-)	NIOSH 2542 OSHA 26	1 Glass filter; mercuric acetate <sup>§</sup>	2-piece, 37 mm	225-9007 <sup>§</sup>	10
4,4'-Methylene bis (2-chloroaniline) (MOCA)	OSHA 71	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10
Methylene bisphenyl (MDI)	OSHA 47 <sup>‡</sup>	1 Glass filter and cellulose support; 1-(2-pyridyl) piperazine <sup>§§</sup>	3-piece, 37 mm	225-9013 <sup>§†</sup> 225-9002 <sup>§§</sup>	10
4,4'-Methylenedianiline	OSHA 57 and NIOSH 5029 <sup>Ω</sup>	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10
1-Naphthylamine, 2-naphthylamine	OSHA 93	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10
Nitric acid - <b>New!</b>	NIOSH 7907	2 Quartz filters; 1 coated with sodium carbonate, 1 uncoated	3-piece, 37 mm	225-9032	10
Nitrobenzene	NIOSH 2017 <sup>‡</sup>	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004 <sup>‡</sup>	10
Ozone	OSHA ID-214	2 Glass filters; nitrite-impregnated	3-piece, 37 mm	225-9014 <sup>§§</sup>	10
Phenylenediamine (o-, m-, p-)	OSHA 87	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10
Phosphine	OSHA 1003	1 Glass filter; 1 polyester filter treated with mercuric chloride	3-piece, 37 mm	225-9018 <sup>§§</sup>	10
Phosphoric acid - <b>New!</b>	NIOSH 7908	1 Quartz filter <sup>▲</sup>	2-piece, 37 mm	225-9033	10
Sulfur dioxide	NIOSH 6004 (modified)	1 MCE pre-filter and support/1 cellulose filter and support; sodium carbonate	3-piece, 37 mm	225-9005	10
Sulfuric acid - <b>New!</b>	NIOSH 7908	1 Quartz filter <sup>▲</sup>	2-piece, 37 mm	225-9033	10
2,4-Toluenediamine	OSHA 65	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10
2,6-Toluenediamine	OSHA 65	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10
o-Tolidine	OSHA 71	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10
o-Toluidine	NIOSH 2017 <sup>‡</sup>	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004 <sup>‡</sup>	10
Toluidine (o-, m-, p-)	OSHA 73	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10
1,3,5-Triglycidyl isocyanurate (TGI)	OSHA PV2055	1 Glass filter; hydrobromic acid	2-piece, 37 mm	225-9027	10
Valeraldehyde	OSHA 85	3 Glass filters; 2,4-dinitrophenylhydrazine and phosphoric acid	3-piece, 37 mm	225-9020 <sup>§</sup>	10
m-Xylenediamine (m-XDA, p-XDA)	OSHA 105	2 Glass filters; sulfuric acid	3-piece, 37 mm	225-9004	10

\* Coated filters have a limited shelf-life.

† Custom order due to very limited shelf-life

Δ ASTM D5836 and D5932 for 2,4-TDI, 2,6-TDI only

◊ Filters only; not preloaded in cassettes

§ Storage below 39.2 F (4 C) required

‡ Also requires Sorbent Tube Cat. No. 226-15

Ω OSHA 57 is an update of NIOSH 5029, which called for a single filter

‡ Suitable for OSHA Methods 42 and 47;

Cat. No. 225-9002 contains higher 2.0 mg 1-2 PP loading

# Collects both vapor and aerosol phases of fluorides. Patented in Canada by IRSST (Institut de recherche Robert-Sauvé en santé et en sécurité du travail du Québec), Canada Patent No. 1,299,114

Σ Meets multiple ASTM methods

▼ Also requires Impinger Cat. No. 225-36-1

∞ The methods listed are the most widely used. Additional methods may be listed in the Sampling Guide at [www.skinc.com](http://www.skinc.com).

• Also requires Sorbent Tube Cat. No. 226-193 or 226-199 for simultaneous,

separate sampling of peracetic acid.

Non 57 - Hecht, G., et al., Simultaneous Sampling of Peroxyacetic Acid and Hydrogen Peroxide in Workplace Atmospheres, The Annals of Occupational Hygiene, Vol. 48, No. 8, 2004, pp. 715-721

■ For inhalable TLV; analysis by OSHA 86

▲ A coated filter is not needed for this method, as sulfuric acid and phosphoric acid are non-volatile acids and are present in the air as an aerosol.

