SKC

THE NEXT GENERATION OF SKC SAMPLE BAGS

SKC

A Name That Stands for 50 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, Tedlar, and FluoroFilm FEP. 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

Pages 4-5

SamplePro FlexFilm
- Low VOC background
- Good stability for a wide variety of VOCs
- Good stability for CO, CO_2, methane, and SF_6
- Acceptable stability for some sulphur compounds (see table on page 6)
- Economically priced

A high background of hydrogen sulphide and carbonyl sulphide make SamplePro FlexFilm unsuitable for sampling these specific compounds. FlexFilm bags should not be rolled or creased during transport and storage. Store bags flat to avoid damage to FlexFilm material.

Pages 6-7

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

Pages 8-9

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

Page 10

FluoroFilm FEP
- Very low VOC and sulphur background
- Inert and mechanically strong

FluoroFilm FEP exhibits poor storage stability for most VOCs and sulphur compounds. Analysis within 24 hours or less is necessary for many compounds.

Page 11

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
Universal Pump or Twin Port Pocket Pump, see p. 15

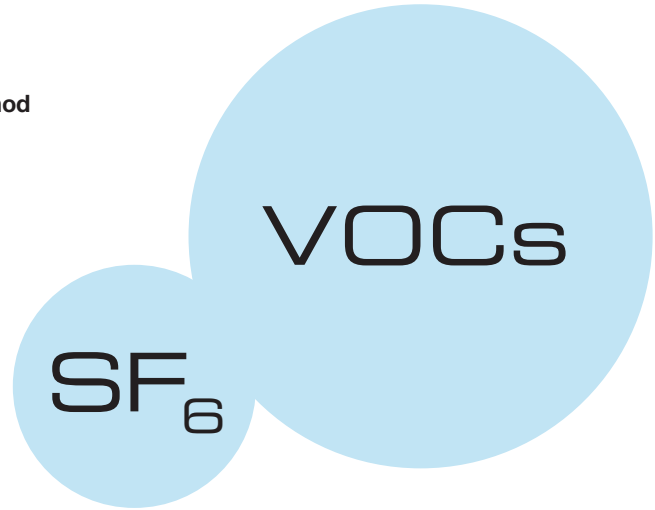
Analysis
Multiple

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

For bag sampling pumps, see page 15.

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	% Recovery 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	% Recovery 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** **232-02A**	**10** **ea**	
0.7 *(Fits Vac-U-Tube 231-945)*	**232-945A**	**10**	
1	**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 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** **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**	

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

For further information on reports and instructions go to www.skcltd.com and look through our 'Guidance' section.

SamplePro FlexFilm Air Sample Bags

Economical Alternative for VOCs

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

Performance Profile

Background
Low VOC (lower total VOC than Tedlar)

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

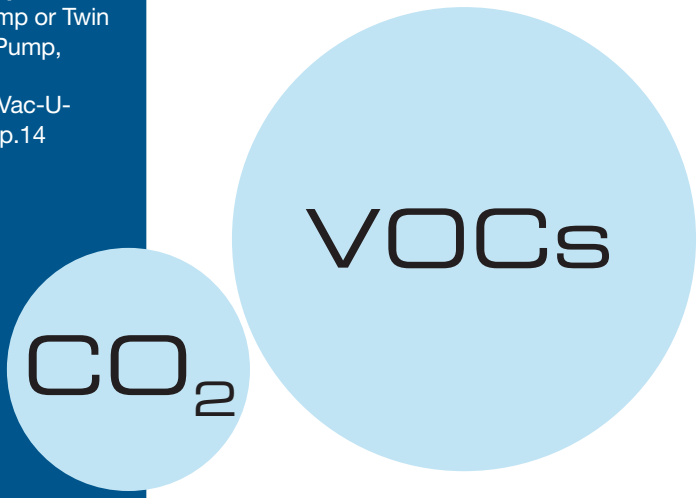
Thickness
3 mil

Sample Pump
Universal Pump or Twin Port Pocket Pump, see p.15
Also see the Vac-U-Chamber on p.14

For bag sampling pumps, call us on 01258 480188 or email enquiries@skcltd.com

SKC SamplePro FlexFilm bags are constructed of 3-mil SKC proprietary material ideally suited for collecting air samples of VOCs. Manufactured exclusively for SKC, FlexFilm features lower total VOC background than Tedlar and shows the same sample stability for VOCs as seen with Tedlar. When combined with SKC quality fittings, the result is an economical sample bag with lower background levels and superior storage stability for collected compounds.

- **Cost effective alternative to Tedlar for performance**
- **Lower total VOC background than Tedlar**
- **Superior storage stability for organic vapors See 2-day storage stability data below**
- **Minimal adsorption**
- **Choice of fittings**
  1) Single combined polypropylene hose/valve and septum for economy and light weight
  2) Dual stainless steel for sampling flexibility
- **Stocked in a variety of sizes**
- **Custom bags available**



Storage Stability of Collected Compounds in FlexFilm Bags*

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

Compound	% Recovery Day 1	% Recovery Day 2
Acetone	96.7	88.9
Acetonitrile	69.0	55.1
Acrylonitrile	76.1	62.2
Allyl chloride	95.6	91.9
Ammonia	18.0	10.0
Benzene	96.0	95.2
Bromoethane	95.2	90.9
1,3-Butadiene	80.0	86.0
Butane	91.0	96.0
Butyl acetate	85.1	91.8
n-Butyl mercaptan	69.5	50.0
tert-Butyl mercaptan	92.5	92.5
Carbon dioxide	100.0	90.0
Carbon disulphide	80.0	74.1
Carbon monoxide	100.0	100.0
Carbon tetrachloride	101.0	94.3
Carbonyl sulphide	126.0‡	135.0‡
Chloroform	98.7	95.9
1,2-Dichloroethane	91.5	82.9
Dichloropropane	86.2	76.7
Diethyl disulphide	68.2	54.1
Diethyl sulphide	88.2	83.9
Dimethyl disulphide	77.3	69.3
Dimethyl sulphide	90.9	89.8
2,5-Dimethylthiophene	68.6	54.7
Ethyl acetate	94.9	95.4
Ethyl mercaptan	81.3	76.9
Ethyl methyl sulphide	88.2	83.9
Ethylene	104.0	100.0
2-Ethylthiophene	72.2	60.0
Heptane	96.7	106.0
Hexane	99.0	98.9
Hydrogen sulphide	7.8‡	2.2‡
Isobutyl mercaptan	81.3	69.2
Isooctane	100.0	97.9
Isopropyl alcohol	99.1	91.7
Isopropyl mercaptan	89.3	86.0
Methane	95.8	92.5
Methyl ethyl ketone (2-Butanone)	96.2	95.8
Methyl mercaptan	78.9‡	67.8‡
Methyl tert-butyl ether	99.2	99.1
Methylene chloride	93.2	87.2
3-Methylthiophene	75.9	65.5
Octane	104.0	98.7
Perchloroethylene	94.8	84.9
Propylene	100.0	99.0
Propylene oxide	93.3	90.1
n-Propyl mercaptan	80.0	70.0
Sulphur hexafluoride	104.0	99.8
Tetrahydrofuran	96.7	93.6
Tetrahydrothiophene	79.6	70.5
Thiophene	81.6	75.9
Toluene	107.0	92.9
1,1,1-Trichloroethane	94.9	93.6
Trichloroethylene	92.4	82.9
Vinylidene chloride	95.6	91.8
p-Xylene	85.9	82.7

* Bags stored at ambient temperatures during study
‡ Blank corrected

SamplePro FlexFilm as alternative to Tedlar

An AIHce 2010 poster showed SKC SamplePro FlexFilm bags to be an ideal alternative to Tedlar.

- Fourteen compounds tested in FlexFilm showed recoveries of > 80% after two days of ambient storage; the same compounds showed very similar results in Tedlar (see page 4).
- A side-by-side Tedlar and FlexFilm background study showed FlexFilm has three times lower VOC background than Tedlar.
- FlexFilm exhibits higher levels of hydrogen sulphide and carbonyl sulphide background than Tedlar.

FlexFilm Bags with Single Polypropylene Fitting

Maximum Capacity (litre)	Part No.	Pack Size.	Fitting
0.5	**236-006**	**10**	
1	**236-001** **236-001A**	**10** **ea**	
3	**236-002** **236-002A**	**10** **ea**	
5	**236-005** **236-005A**	**10** **ea**	
8 *(Fits large Vac-U-Chamber 231-939)*	**236-004**	**10**	
10	**236-003** **236-003A**	**10** **ea**	
25	**236-007**	**5**	
40	**236-040**	**5**	
80	**236-080**	**5**	
100	**236-100**	**3**	
Replacement Septa	**236-01-RS**	**10**	

FlexFilm Bags with Dual Stainless Steel Fittings

Maximum Capacity (litre)	Part No.	Pack Size.	Fitting
0.5	**237-02** **237-02A**	**10** **ea**	
1	**237-01** **237-01A**	**10** **ea**	
3	**237-03** **237-03A**	**10** **ea**	
5	**237-05** **237-05A**	**10** **ea**	
10	**237-08**	**10**	
25	**237-25**	**5**	
40	**237-40**	**5**	
80	**237-80**	**5**	
100	**237-100**	**3**	
Replacement Septa	**231-9-04**	**10**	

The Unique Properties of SamplePro FlexFilm

Water Vapour Transmission:	13.5 g/m² x d
Oxygen Permeability:	52.5 cc/m² x d
Carbon Dioxide Permeability:	171 cc/m² x dv
Material Thickness:	3 mil
Temperature Resistance:	140°F (60°C)

Tech Tips

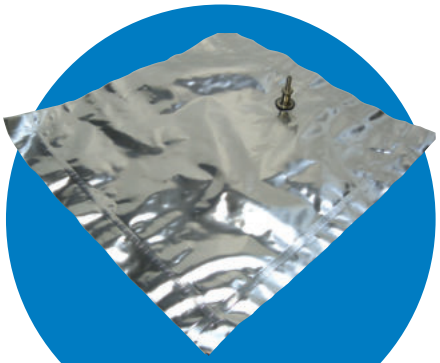
- *Bags are designed for single use only.*
- *Do not use FlexFilm bags at temperatures above 140°F (60°C).*
- *In addition to bag material temperature tolerance, maximum bag operating temperature can also depend on O-ring or fitting temperature tolerances. Check individual bag operating instructions for maximum operating temperature. See page 11 for related Tech Tip.*
- *Store bags flat. Do not roll or crease bags during storage.*
- *Do not ship bags by air unless the cargo cabin is pressurised. Check appropriate regulations.*
- *Do not fill bags > 80%.*

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)

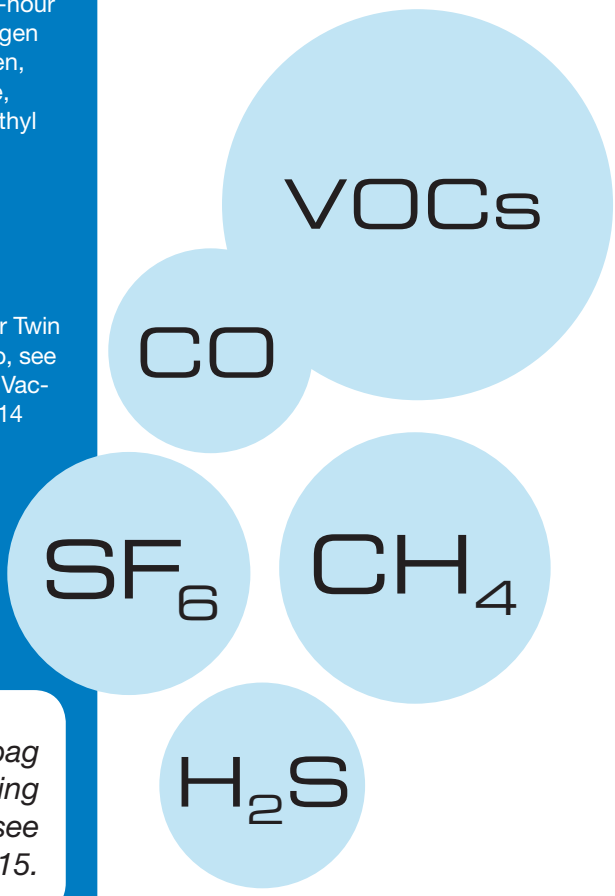
Stability
Good for low ppm to high ppb level VOCs Good for CO, CO_2, methane, hydrogen, and SF_6 Good 48-hour stability for hydrogen sulphide, hydrogen, carbonyl sulphide, and methyl and ethyl mercaptan

Thickness
4 ply (5 mil)

Sample Pump
Universal Pump or Twin Port Pocket Pump, see p.15 Also see the Vac-U-Chamber on p.14

For bag sampling pumps, see page 15.

- **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	252-01 252-01A	10 ea	
3	252-03 252-03A	10 ea	
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	253-01 253-01A	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 Breath-gas Analysis Bags

FlexFoil PLUS Breath-gas Analysis Bags A *Journal of Chromatography B* article identified SKC FlexFoil PLUS sample bags as the best choice for storing volatile sulphur compounds (VSCs) - important biomarkers in human breath - for up to 24 hours.

FlexFoil PLUS Bags for Breath-gas Analysis

Maximum Capacity (litre)	Part No.	Pack Size.	Fitting
1	239-01	3	
3	239-03	3	

About

FlexFoil Bag Applications

- Biogas and landfill gas (LFG) sampling
- CO_2 - OSHA Method ID-172
- CO_2 - 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, CO_2, SF_6)

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.

More Information

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

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
Universal Pump or Twin Port Pocket Pump, see p.15

H_2S

More Information

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

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	262-01 252-01A	10 ea	
3	262-03 262-03A	10 ea	
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	263-01 263-01A	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	

FluoroFilm FEP Air Sample Bags

For Low-level Sampling with Analysis in < 1 Day

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

Performance Profile

Background
Very low VOC and low sulphur

Stability
Good up to 24 hours for some VOCs and low molecular weight gases

Thickness
2 mil

Sample Pump
Universal Pump or Twin Port Pocket Pump, see p. 15

FluoroFilm FEP (fluorinated ethylene propylene) is the most chemically inert of all bag materials.

- **Very low VOC and sulphur background**
- **Choice of all-in-one PTFE or stainless steel hose/valve and septum fittings**
- **Mechanically strong 2-mil FEP — resists impact and tearing**
- **Custom bags available**

VOCs

Tech Tips

- *Use only PTFE tubing for bag sampling to prevent sample loss through adsorption to the tubing's inner surface. See page 13 for tubing*
- *Sample bag maximum operating temperature can be dictated by the temperature tolerances of the bag material, fitting material, and/or fitting components such as O-rings.*
  - ***SKC single stainless steel, dual stainless steel, and PTFE fittings:*** *maximum temperature is 225°F (107.2°C) due to the fitting O-ring.*
  - ***SKC single polypropylene fitting:*** *Maximum temperature is 200°F (93.3°C) due to the fitting material.*
  - ***SKC FlexFilm sample bags:*** *Maximum temperature is 140°F (60°C) due to the bag material.*
- *The chemical properties of FluoroFilm FEP bags necessitate rapid analysis for reliable results.*

FluoroFilm FEP Bags with Single Stainless Steel Fitting

Maximum Capacity (litre)	Part No.	Pack Size.	Fitting
0.5	**243-02**	**5**	
1	**243-01**	**5**	
3	**243-03**	**5**	
Replacement Septa	**233-01-RS**	**10**	

FluoroFilm FEP Bags with Single PTFE Fitting

Maximum Capacity (litre)	Part No.	Pack Size.	Fitting
0.5	**240-02**	**5**	
1	**240-01**	**5**	
3	**240-03**	**5**	
Replacement Septa	**233-01-RS**	**10**	

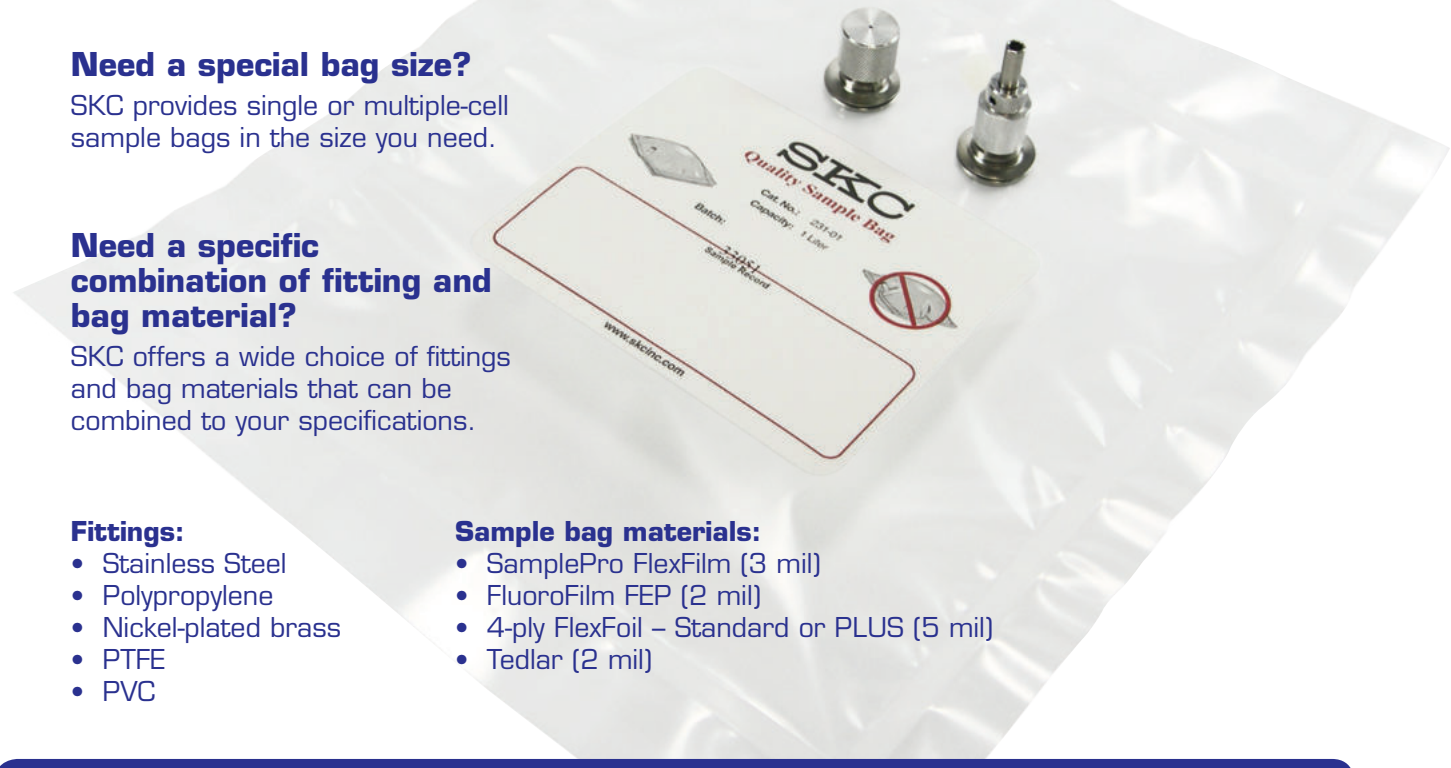
Storage Stability of Collected Compounds in FluoroFilm FEP Bags

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

Compound	% Recovery Day 1	% Recovery Day 2
Acetone	89.0	85.0
Acetonitrile	65.0	42.0
Acrylonitrile	77.0	59.0
Allyl chloride	92.0	89.0
Ammonia	59.0	28.0
Benzene	93.0	79.0
Bromoethane	88.0	86.0
1,3-Butadiene	84.0	73.0
Butane	91.0	96.0
Butyl acetate	72.0	66.0
n-Butyl mercaptan	74.5	60.2
tert-Butyl mercaptan	86.0	78.0
Carbon dioxide	90.0	50.0
Carbon disulphide	58.3*	35.6*
Carbon monoxide	90.0	50.0
Carbon tetrachloride	95.0	91.0
Carbonyl sulphide	82.9*	71.2*
Chloroform	96.0	93.0
1,2-Dichloroethane	89.0	79.0
Dichloropropane	90.0	86.0
Diethyl disulphide	62.9	49.5
Diethyl sulphide	78.0	66.0
Dimethyl disulphide	74.0	62.0
Dimethyl sulphide	77.0	69.0
2,5-Dimethylthiophene	60.0	45.3
Ethyl acetate	94.0	94.0
Ethyl mercaptan	78.0	65.0
Ethyl methyl sulphide	77.0	68.0
Ethylene	99.0	94.0
2-Ethylthiophene	65.0	53.0
Heptane	88.0	87.0
Hexane	98.0	95.0
Hydrogen sulphide	72.2	47.8
Isobutyl mercaptan	83.0	67.0
Isooctane	97.0	96.0
Isopropyl alcohol	102.0	98.0
Isopropyl mercaptan	84.0	74.0
Methane	84.1	71.5
Methyl ethyl ketone (2-Butanone)	90.0	83.0
Methyl mercaptan	74.0	57.0
Methyl tert-butyl ether	99.0	97.0
Methylene chloride	84.0	77.0
3-Methylthiophene	67.0	53.0
Octane	91.0	84.0
Perchloroethylene	81.0	69.0
n-Propyl mercaptan	79.0	66.0
Propylene	97.0	91.0
Propylene oxide	94.0	89.0
Sulphur hexafluoride	96.4	92.8
Tetrahydrofuran	90.0	88.0
Tetrahydrothiophene	71.0	56.0
Thiophene	76.0	64.0
Toluene	81.0	74.0
1,1,1-Trichloroethane	100.0	97.0
Trichloroethylene	80.0	69.0
Vinylidene chloride	96.0	92.0
p-Xylene	76.0	65.0

* **Blank corrected**

CUSTOM AIR SAMPLE BAGS MADE TO YOUR SPECIFICATIONS



Need a special bag size?
SKC provides single or 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!
enquiries@skcltd.com

Vac-U-Tube

For Quick Bag Samples Without a Pump

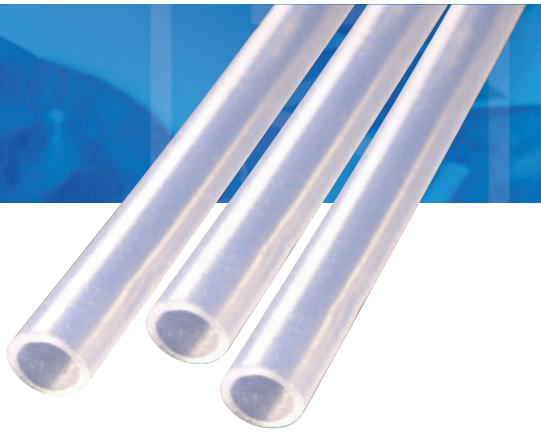
The Vac-U-Tube acrylic syringe with removable face plate allows a specially designed 0.7-litre sample bag to be placed inside. The bag is attached to the face plate that is then secured to the syringe. Sample by pulling the plunger or purge by pushing the plunger. The Vac-U-Tube can be used for headspace soil gas sampling.

- **No electronic pump required**
- **Setup takes less than 20 seconds**
- **Convenient for testing monitoring wells**

Description		Part No.	Pack Size.
Vac-U-Tube includes Vac-U-Tube and carry case, requires either sample bag below (not included)		**231-945**	**ea**
Vac-U-Tube Bag, 0.7 litre	Tedlar	**232-945A**	**10**
	SamplePro FlexFilm	**236-945A**	**10**

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 and Twin Port Pocket Pump 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 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 (231-9-23 above)	**231-926**	

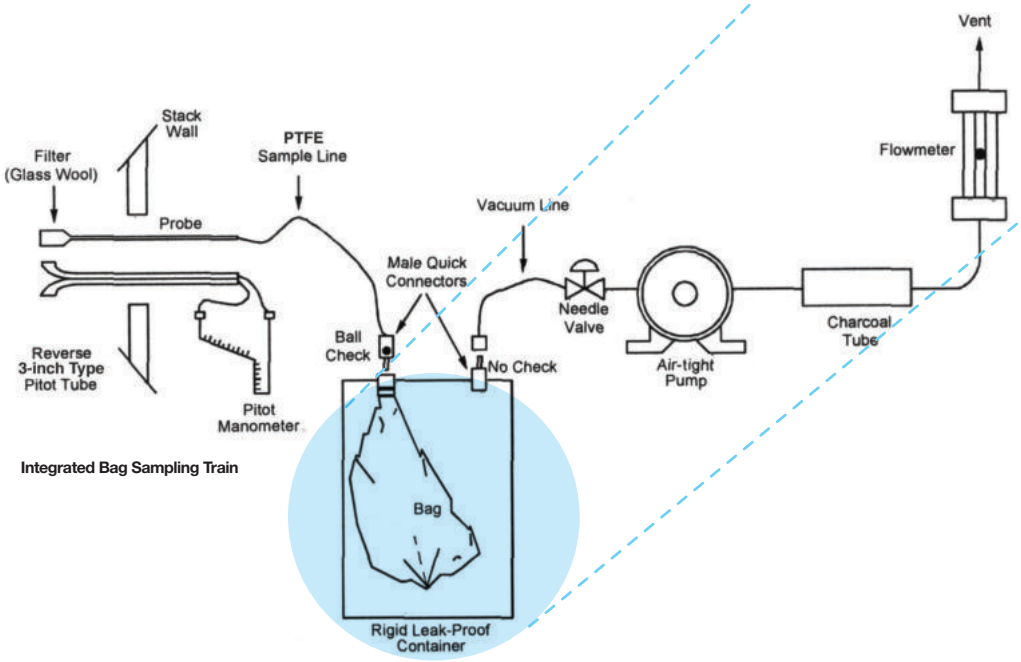
Tech Tips

• 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

- Industrial VOCs
- Indoor air quality
- Effluent gas samples
- Soil gas/vapour sampling
- Groundwater testing
- Stack sampling
- Ventilation studies

Large Vac-U-Chamber

Description	Part No.
Complete Vac-U-Chamber Kit includes 224-PCMTX8 sample pump, single charger (223-203A) with cable, large Vac-U-Chamber, and 10 Tedlar sample bags (232-939)	**224-4115MTX**
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, pk/10, for use with large Vac-U-Chamber (232-939)	**232-939**

Small Vac-U-Chamber

Description	Part No.
Complete Vac-U-Chamber Kit includes 224-PCMTX8 sample pump, single charger (223-203A), small Vac-U-Chamber, and 10 Tedlar sample bags (232-01)	**224-4124MTX**
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, pk/10, for use with small Vac-U-Chamber	**232-01**

Larger sizes are available; contact SKC on 01258 480188

Twin Port Pocket Pump - 20 to 225 ml/min

Programmable Sample Bag Pump

The twin port Pocket Pump® is ideal for bag sampling and other applications. Operate Pocket Pump from the simple 3-button integral keypad for quick grab samples. Or, program Pocket Pump from a PC using DataTrac® for Pocket Pump Software. Pocket Pump can be programmed for delayed start and timed runs.

- **12-hour run time with rechargeable NiMH battery**
- **Constant flows from 20 to 225 ml/min — suitable for other applications**
- **Simple 3-button operation or program with a PC using DataTrac software accessory**
- **Continuous sample volume calculations**

Description	Part No.
Twin Port Pocket Pump* with NiMH battery pack, requires charger 223-229A 100-240V for tubing, see Part Nos. 231-9-23 and 231-926 on p. 13	**210-1003MTX**

*** ATEX Listed.**

Universal sample pump 5-4000ml/min

Alternative pump for filling bags

The SKC Universal pump is the alternative choice for filling sample bags. With a flow range of 5-4000ml/min and integrated flow indicator the Universal sample pump can be adjusted to suit the application. Simply attach the sample bag to the outlet port and turn on your pump. For tubing see page 13 (231-9-23)

- **Rechargeable NiMH battery pack for convenience**
- **Easily adjustable flow rate**
- **Suitable for many environments and applications.**

Description	Part No.
Universal ATEX approved Standard Pump 5-4000ml/min with NiMH battery pack operating manual and tool kit*	**224-44MTX**
Universal ATEX approved Intermediate Pump 5-4000ml/min with NiMH battery pack operating manual and tool kit*	**224-PCMTX4**
Universal ATEX approved Deluxe Pump 5-4000ml/min with NiMH battery pack operating manual and tool kit *	**224-PCMTX8**

*** Requires charger (223-203A)**

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