SKC Sample Bags Bag Materials Expand Sampling Options

SKC Sample Bags

In addition to the classic Tedlar bag, SKC provides the world's largest selection of bags in materials for various compounds in stock and ready for shipment. SKC sample bags are constructed of low-background topgrade bag materials with evenly sealed leak-free seams and high-quality bag fittings.

Make the Best Choice!

SKC publishes performance data on its bag materials to equip you with the knowledge you need to make the best choice. *See www.skcinc.com/instructions/1805. pdf for information.*

Choose the Best Bag for Your Application

Tedlar

- Classic DuPont film
- Good stability for VOCs, CO, CO₂, methane, SF₆, and some sulfur compounds including hydrogen sulfide

Standard FlexFoil®

- Effectively retains hydrogen sulfide for 48 hours!
- Good light and moisture barrier properties
- Good stability for CO, CO₂, methane, hydrogen, hydrogen sulfide, carbonyl sulfide, methyl and ethyl mercaptan, and sulfur hexafluoride (SF₆)

FlexFoil PLUS

- ► All the benefits of Standard FlexFoil PLUS...
 - Low VOC backgrounds
 - Good stability for VOCs
 - Suitable for collecting low ppm to high ppb-level VOCs
 - New bags for breath-gas analysis!

SamplePro[®] FlexFilm

- Low VOC background
- Good stability for many VOCs, CO, CO₂, methane, and sulfur hexafluoride (SF₆)
- Acceptable stability for some sulfur compounds
- Not recommended for hydrogen sulfide and carbonyl sulfide
- Most economical option
- Requires flat storage and transport for sample integrity

Bag Stability Data

Want to know the stability of specific compounds in different types of film? Access the SKC Bag Stability Report at www.skcinc.com/instructions/1805.pdf.





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Page 58



SKC Quality Bag Films

SKC manufactures and stocks high-quality 2-mil DuPont Tedlar, 3-mil SamplePro FlexFilm, and 5-mil 4-ply FlexFoil sample bags. Seams are strong, evenly sealed, and leak tested.



ABOUT SKC Superior Bag Fittings

SKC stocks sample bags with a choice of fittings to meet your applications. SKC bag fittings are designed specifically for industrial hygiene and environmental air sampling. Choose from dual stainless steel or all-in-one polypropylene, stainless steel, or PTFE fittings that combine the hose/valve and septum into one lightweight, economical fitting.





For Bag Sampling Pumps see page 60

SKC Asia www.skc-asia.com

Tedlar Sample Bags



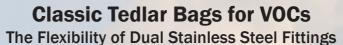
Breath-gas Analysis Bags ACGIH lists Biological Exposure Indices (BEIs) determined by end-exhaled air for methyl chloroform, tetrachloroethylene, and trichloroethylene. SKC Breath-gas Analysis Bags are also ideal for

collecting samples of human breath to be analyzed for volatile organic compounds (VOCs) or volatile sulfur compounds (VSCs), possible biomarkers for some diseases. SKC Breath-gas Analysis Bags are offered in Tedlar and FlexFoil PLUS (page 57). See www.skcinc. com/instructions/1805.pdf for information on bag material stability.

For PTFE Tubing see page 60

> SKC Bag Stability Report skcinc.com/instructions/1805.pdf www.skcinc.com

More Information

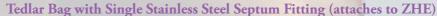


- Dual stainless steel fittings provide complete sampling flexibility
 - Bags are configured with one hose/valve fitting and one septum fitting
- Reliable, inert stainless steel fitting construction prevents leakage
- Stocked in a variety of sizes; custom bags available
- Bag available for EPA TCLP method
- Breath-gas analysis bags for end-exhaled air determined BEIs and medical applications (see left)



Tedlar Bags with Dual Stainless Steel Fittings

		0	
Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
1	231-01	10	
	231-01A	ea	
3	231-03	10	
5	231-05	10	
	231-05A	ea	
10	231-10	10	
25	231-25	5	
50	231-50	5	Case Case
75	231-75	5	
100	231-100	3]
Replacement Septa	231-9-04	10	



Description	Cat. No.	Qty.	Fitting
Tedlar Sample Bag, 1 liter, with single stainless steel septum fitting suitable for attaching directly to Zero Head- space Extractor (ZHE) with stainless steel adapter, <i>required</i>	231-01-TCLP	10	
Stainless Steel Adapter, for use with ZHE, required	231-01-ZHE	ea	

Tedlar Bag with Stainless Steel Breath-gas Analysis Fitting

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

SKC Ltd.

Tedlar Sample Bags

C Tech Tips

Classic Tedlar Bags for VOCs Convenient and Economical Single Polypropylene Fitting

- Single combined polypropylene fitting
 Combines the septum and hose/valve into one fitting
- An industry standard!
- Economical

Performance Profile

Background Moderately low VOC Stability Good for VOCs, some sulfur compounds (including H₂S), CO, CO₂, methane, and SF₆ Thickness

2 mil

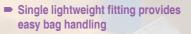
Sample Pump Grab Air or Pocket Pump TOUCH, see pp. 60-61

Tedlar Bags with Single Polypropylene Fitting

	0		
Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
0.5	232-02	10	
0.7	232-945A	10]
(Fits Vac-U-Tube Cat. No. 231-945)			
1	232-01	10	
(Fits small Vac-U-Chamber Cat. No. 231-940)	232-01A	ea	
3	232-03	10	
	232-03A	ea	
5	232-05	10	
	232-05A	ea	1 million
8	232-939	10	1.000
(Fits large Vac-U-Chamber Cat. No. 231-939)			
10	232-10	10	
(Fits extra-large Vac-U-Chamber Cat. No. 231-944)	232-10A	ea	
25	232-25	5	
(Fits jumbo Vac-U-Chamber Cat. No. 231-946)			
50	232-50	5	
75	232-75	5]
100	232-100	3	1
Replacement Septa	232-01-RS	10	1

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, <i>see About on p. 54</i>	249-01-PP	5	



Stocked in a variety of sizes; custom bags available







For Bag Sampling Pumps see page 60



For Vac-U-Chamber see pages 62-63

Standard FlexFoil Sample Bags



Standard FlexFoil Applications

- CO₂ OSHA Method ID-172
- CO₂ NIOSH 6603
- CO OSHA ID-210[‡]
- Sulfur compounds
- Indoor air studies (CO, CO_{2,} SF₆)
- ‡ OSHA ID-210 specifies 5-layer foil bags. SKC 4-ply FlexFoil bags hold 100 ppm CO for 5 days without loss. See www.skcinc.com/ instructions/1706.pdf for more information.



KC Bag Stability Report – skC bag Stability Report – www.skcinc.com/instructions/1805.pdf www.skcinc.com

Standard FlexFoil Sample Bags

Superior Bag for Sulfur Compounds and Low Molecular Weight Gases

- 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, CO₂, methane, hydrogen, and SF_6 Good 48-hour stability for hydrogen sulfide, hydrogen, carbonyl sulfide, and methyl and ethyl mercaptan

Thickness

4 ply (5 mil) Sample Pump

Grab Air or Pocket Pump TOUCH, see pp. 60-61 Also see the Vac-U-Chamber on pp. 62-63.

Standard FlexFoil Bags with Single Polypropylene Fitting

e	0	1 17 0	
Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
1	262-01	10	
(Fits small Vac-U-Chamber Cat. No. 231-940)	262-01A	ea	
3	262-03	10	
	262-03A	ea	
5	262-05	10	
8	262-08	10	1 Martin
(Fits large Vac-U-Chamber Cat. No. 231-939)			1.000
10	262-10	10	
(Fits extra-large Vac-U-Chamber Cat. No. 231-944)			
25	262-25	5	
(Fits jumbo Vac-U-Chamber Cat. No. 231-946)			
50	262-50	5	
Replacement Septa	236-01-R	S 10	

Standard FlexFoil Bags with Single Stainless Steel Fitting

0	0	0	
Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
1	263-01	10	
	263-01A	ea	
3	263-03	10	1
	263-03A	ea	
5	263-05	10	
10	263-10	10	rm:
25	263-25	5	
50	263-50	5	
Replacement Septa	233-01-RS	10	

FlexFoil PLUS Sample Bags

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

Performance Profile

Low VOC and sulfur (specially cleaned)

Good for low ppm to high ppb-level VOCs

Good 48-hour stability for hydrogen sulfide,

hydrogen, carbonyl sulfide, and methyl and

Good for CO, CO2, methane, hydrogen, and SF6

Grab Air or Pocket Pump TOUCH, see pp. 60-61 Also see the Vac-U-Chamber on pp. 62-63.

Background

ethyl mercaptan

Thickness

4 ply (5 mil) Sample Pump

Stability

- 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
 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
- Breath-gas analysis bags are available in FlexFoil PLUS

FlexFoil PLUS Bags with Single Polypropylene Fitting

Cat. No.	Qty.	Fitting
252-01	10	
252-01A	ea	
252-03	10	
252-03A	ea	
252-05	10	
252-08	10	
252-10	10	
252-25	5	
252-50	5	
236-01-RS	10	
	252-01 252-01A 252-03 252-03A 252-05 252-08 252-10 252-25 252-50	252-01 10 252-01A ea 252-03 10 252-03A ea 252-05 10 252-08 10 252-10 10 252-25 5 252-50 5

FlexFoil PLUS Bags with Single Stainless Steel Fitting

		-	
Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
1	253-01	10	
	253-01A	ea	-
3	253-03	10	
	253-03A	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 About on p. 54 for details.			i i i i i i i i i i i i i i i i i i i
Stainless steel fitting	269-01	5	1
Polypropylene fitting	269-01-PP	5	🥮 i 👄

A B O U T FlexFoil PLUS Sample Bag

Applications

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



www.skcinc.com/instructions/1805.pdf www.skcinc.com

АВОИТ

Breath-gas Applications

- 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



Easy sampling for breath-gas analysis

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Cinc. www.skcinc.com

FlexFilm Sample Bags



- SamplePro FlexFilm bags have a maximum operating temperature of 60 C (140 F).
- Store bags flat. Rolling or creasing bags during storage can affect performance.
- ▶ Inflate bags only to 80%.

SamplePro FlexFilm as Alternative to Tedlar

SKC SamplePro FlexFilm bags are a suitable low-cost alternative to Tedlar.

- Tests on 14 compounds in Flex-Film provided recoveries of > 80% after two days of ambient storage; results for the same compounds were similar in Tedlar.
- A side-by-side background study of Tedlar and FlexFilm proved FlexFilm has three times lower VOC background than Tedlar.
- FlexFilm exhibits higher levels of hydrogen sulfide and carbonyl sulfide background than Tedlar.
- FlexFilm requires flat storage to maintain material integrity.



Economical Alternative to Tedlar for VOCs Best alternative to Tedlar for

- Best alternative to Tedlar for performance and economy
- Lower total VOC background than Tedlar
- Minimal adsorption
- Choice of fittings
 - Single combined polypropylene hose/valve and septum for economy and light weight
 - Dual stainless steel for sampling flexibility
- Stocked in a variety of sizes; custom bags available

Performance Profile

Background Low VOC (lower total VOCs than Tedlar)

Stability

Good for VOCs, CO, CO₂, methane, and SF_6 Acceptable for some sulfur compounds

Thickness

SamplePro FlexFilm Air Sample Bags

3 mil

Sample Pump Grab Air or Pocket Pump TOUCH, see pp. 60-61

Grab Air or Pocket Pump TOUCH, see pp. 60-6. Also see the Vac-U-Chamber on pp. 62-63.

FlexFilm Bags with Single Polypropylene Fitting

Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
0.5	236-006	10	
	236-006A	ea	
1	236-001	10	
(Fits small Vac-U-Chamber Cat. No. 231-940)	236-001A	ea	
3	236-002	10	
	236-002A	ea	
5	236-005	10	
	236-005A	ea	and the second sec
8	236-004	10	1.000
(Fits large Vac-U-Chamber Cat. No. 231-939)			
10	236-003	10	
(Fits extra-large Vac-U-Chamber Cat. No. 231-944)	236-003A	ea	
25	236-007	5	
(Fits jumbo Vac-U-Chamber Cat. No. 231-946)			
40	236-040	5	
80	236-080	5	
Replacement Septa	236-01-RS	10	

FlexFilm Bags with Dual Stainless Steel Fittings

		•	
Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
0.5	237-02	10	
	237-02A	ea	
1	237-01	10	
	237-01A	ea	
3	237-03	10	
	237-03A	ea	
5	237-05	10	
	237-05A	ea	Titlett Title
10	237-08	10	
	237-08A	ea	
25	237-25	5	-
40	237-40	5	
80	237-80	5	1
Replacement Septa	231-9-04	10	7

Larger FlexFilm bag sizes are available. Contact SKC.

SKC Ltd. www.skcltd.com • SKC South Africa www.skcsouthafrica.co.za

SKC CUSTOM AIR SAMPLE BAGS SAMPLE BAGS MADE R WAY!

Special bag sizes

SKC manufactures single or multiple-cell sample bags for your applications.

Quality fittings for your applications

SKC offers fittings designed specifically for air sampling in the following configurations and materials:

- All-in-one Stainless Steel
- Oual Stainless Steel
- All-in-one Polypropylene
- All-in-one PTFE
- Ombination

Choice of bag material

SKC manufactures its bags from ultra-clean top-grade materials with strong evenly sealed seams. Choose from the following bag materials:

- SamplePro FlexFilm (3 mil)
- Tedlar (2 mil)
- 4-ply Standard FlexFoil (5 mil)
- 9 4-ply FlexFoil PLUS (5 mil)

SKC will create the bags you need!

Select the film, fitting, and bag dimensions at www.skcinc.com/catalog/infopage.php?id=2900 and send the form to your SKC representative. SKC will take it from there!



Indoor air



Soil vapor





Worker or process exposure



Material testing

Biogas/landfill gas/Superfund sites rustom Sau 0205

Stack emissions

Demonmens Contact SKC today for a quote on your custom sample bags! www.skcinc.com and search on "laboratories

SKC Asia www.skc-asia.com

Bag Sampling Accessories Pump/Tubing

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.



Cat. No.
222-2301
222-2111

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.



		Length in
PTFE Tubing	Cat. No.	Meters (feet)
Fits over all SKC bag fittings and Grab Air pump exhaust		
4.76-mm (3/16-inch) ID, 6.35-mm (1/4-inch) OD	231-9-23	3 (10)
Fits inside bag fitting		
1.59-mm (1/16-inch) ID, 3.18-mm (1/8-inch) OD	231-9-21	3 (10)
Fits Vac-U-Chamber sample inlet port	231-937	3 (10)
6.35-mm (1/4-inch) ID, 7.94-mm (5/16-inch) OD	231-924	15 (50)



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 260 C (500 F).

Bag Sampling Pumps



Quick-connect Accessory for Secure Bag Sampling

- Rugged metal
- Easy installation
- Holds 6.35-mm (1/4-inch) OD tubing securely
- Press to release tubing



The Quick-connect Adapter accessory makes bag sampling with Pocket Pump TOUCH fast and easy. The Quick-connect Adapter threads into the pump exhaust port and securely holds 6.35-mm (1/4-inch) OD tubing (Cat. No. 231-9-23) 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 62-63

Bag Sampling System 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.

Vapor Intrusion Monitoring

Soil Gas Sampling for Vapor Intrusion Evaluations

Soil gas sampling can identify underground contamination and trace the source, extent, and movement of pollutants.

U.S. EPA Standard Operating Procedure (SOP) 2042 for Soil Gas Sampling specifies sample bags as containers inside an airtight chamber (e.g., Vac-U-Chamber). A sample pump creates negative pressure in the chamber, causing soil gas to enter into the bag directly. Samples are analyzed in the field with direct-reading instruments and/or in a qualified laboratory.

Bag Sampling System Vac-U-Chamber

Vac-U-Chamber Multiple Sizes Available for Your Applications

Applications

- U.S. EPA Method 18 (VOCs industrial sources)
- U.S. EPA 0040 (POHCs stationary sources)
- Soil gas/vapor sampling - U.S. EPA SOP 2042
- Indoor air remediation system monitoring petroleum constituents (U.S. EPA SOPs 2102, 2103, and 2104)
- Groundwater testing
- Stack sampling
- Ventilation studies
- Hazmat testing

Small Vac-U-Chamber for 1-liter Bags

Description		Cat. No.	Qty.
Complete Vac-U-Chamber Kit includes Standard AirChek XR5000 sample pump,			
single charger, small Vac-U-Chamber, and 10 Tedlar sample bags Cat. No. 232-01			
	100-240 V	210-4124	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	Tedlar	232-01	10
use with small Vac-U-Chamber Cat. No. 231-940	SamplePro FlexFilm	236-001	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 Standard AirChek XI			
single charger, large Vac-U-Chamber, and 10 Tedlar sample			
	100-240 V	210-4115	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	Tedlar	232-939	10
use with large Vac-U-Chamber Cat. No. 231-939	SamplePro FlexFilm	236-004	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	Tedlar	232-10	10
use with extra-large Vac-U-Chamber Cat. No. 231-944	SamplePro FlexFilm	236-003	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	Tedlar	232-25	5
use with jumbo Vac-U-Chamber Cat. No. 231-946	SamplePro FlexFilm	236-007	5
	FlexFoil PLUS	252-25	5
	Standard FlexFoil	262-25	5



Standard of **Good Practice**

For best results, do not reuse sample bags. This prevents the risk of "carry over" from the previous sample.

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



For Sample Pumps, see pages 14-15



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