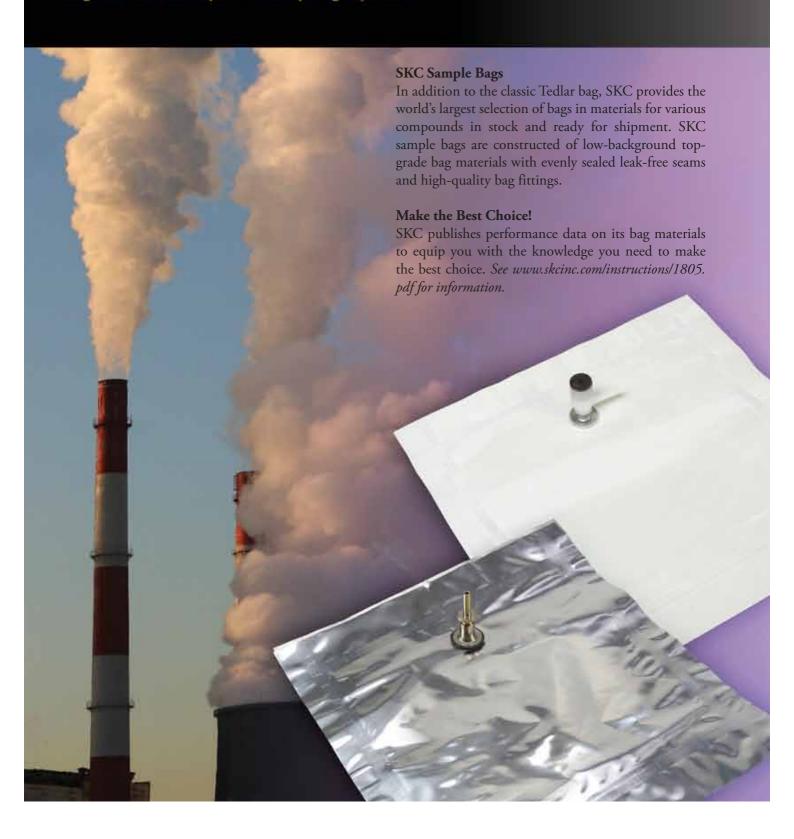
SKC Sample Bags Bag Materials Expand Sampling Options



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



Pages 54-55



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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

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.

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.

Classic Tedlar Bags for VOCs

The Flexibility of Dual Stainless Steel Fittings

- 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

O. Qty. 10 4 ea 10 10	Fitting
A ea 10	
10	_
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A ea	
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5	100
5	Carre Carre
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3	
4 10	
_	10 5 5 5 5 0 3

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

	I I	0 \	
Description	Cat. No.	Qty.	Fitting
Tedlar Sample Bag, 1 liter, 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	

Tedlar Bag with Stainless Steel Breath-gas Analysis Fitting

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

For PTFE Tubing see page 60



skcinc.com/instructions/1805.pdf

www.skcinc.com

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

- Single lightweight fitting provides easy bag handling
- Stocked in a variety of sizes; custom bags available





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

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	1000
8	232-939	10	1000
(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	
Replacement Septa	232-01-RS	10	

Tedlar Bag with Polypropylene Breath-gas Analysis Fitting

Description Description	Cat. No.	Qty.	Fitting
		Gty.	Fitting
Tedlar Sample Bags, 1 liter, each with polypropylene fitting, fitting adapter, and individually packaged clean mouthpiece, see About on p. 54	249-01-PP	5	





Incorrect inflation



Correct inflation



For Bag Sampling Pumps see page 60



For Vac-U-Chamber see pages 62-63

АВОІ

Standard FlexFoil Applications

- CO₂ OSHA Method ID-172
- CO₂ NIOSH 6603
- CO OSHA ID-210‡
- Sulfur compounds
- Indoor air studies (CO, CO₂,
- ‡ 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.



- **■** 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 SF₆ 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.



More Information SKC Bag Stability Report w.skcinc.com/instructions/1805.pdf www.skcinc.com

Standard FlexFoil Bags with Single Polypropylene Fitting

		11 11	
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	1000
(Fits large Vac-U-Chamber Cat. No. 231-939)			1000
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-RS	3 10	

Standard FlexFoil Bags with Single Stainless Steel Fitting

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	rmi
25	263-25	5	
50	263-50	5	
Replacement Septa	233-01-RS	10	

FlexFoil PLUS Sample Bags

Specially Cleaned for Low ppm to High ppb-Level VOCs

- 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

Performance Profile

Background

Low VOC and sulfur (specially cleaned)

Stability

Good for low ppm to high ppb-level VOCs

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

FlexFoil PLUS Bags with Single Polypropylene Fitting

Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
1	252-01	10	
(Fits small Vac-U-Chamber Cat. No. 231-940)	252-01A	ea	
3	252-03	10	
	252-03A	ea	
5	252-05	10	
8	252-08	10	1000
(Fits large Vac-U-Chamber Cat. No. 231-939)			1000
10	252-10	10	
(Fits extra-large Vac-U-Chamber Cat. No. 231-944)			
25	252-25	5	
(Fits jumbo Vac-U-Chamber Cat. No. 231-946)			
50	252-50	5	
Replacement Septa	236-01-RS	10	

FlexFoil PLUS Bags with Single Stainless Steel Fitting

0 0		0	
Maximum Capacity (liter)	Cat. No.	Qty.	Fitting
1	253-01	10	
	253-01A	ea	
3	253-03	10	1
	253-03A	ea	
5	253-05	10	9
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
Stainless steel fitting	269-01	5	1
Polypropylene fitting	269-01-PP	5	

ABOU

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



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

Tech Tips

- ► 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

- 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.

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

Sample Pro FlexFilm Air Sample Bags

Economical Alternative to Tedlar for VOCs

- 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 SF₆ Acceptable for some sulfur compounds

Thickness

3 mil

Sample Pump

Grab Air or Pocket Pump TOUCH, see pp. 60-61 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	1000
8	236-004	10	1000
(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	m
	237-03A	ea	
5	237-05	10	
	237-05A	ea	Title Title
10	237-08	10	300
	237-08A	ea	
25	237-25	5	
40	237-40	5	
80	237-80	5	
Replacement Septa	231-9-04	10	

Larger FlexFilm bag sizes are available. Contact SKC.

SKE CUSTOM AIR SAMPLE BAGS SAMPLE BAGS MADE

YOUR 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
- Dual Stainless Steel
- All-in-one Polypropylene
- All-in-one PTFE
- Combination

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)
- 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



Biogas/landfill gas/Superfund sites



Soil vapor



Stack emissions



Worker or process exposure



Material testing

SKC custom sample bags are proven performers!

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

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

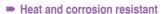
The SKC Grab Air Sample Pump is an economical choice for grab-and-go bag sampling when intrinsic safety is not required. Grab Air operates at a fixed flow rate of 1 L/min for up to 1000 liters of volume on one 9-volt battery. Simply attach a sample bag to the outlet port and turn on the pump. Simple, quick, economical — Grab Air.



Description	Cat. No.
Grab Air Pump with 9-volt alkaline battery; for tubing, see Cat. No. 231-9-23 below	222-2301
Grab Air Hazmat Kit includes pump as described above, 0.9 meter (3 feet) of 4.76-mm (3/16-inch) ID	
PTFE tubing, and ten 1-liter Tedlar bags with single polypropylene fitting Cat. No. 232-01	222-2111

PTFE Tubing

Inert Tubing for Bag Sampling



- 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).

Focket rum? TOUCH — 20 to 500 ml/min

Programmable Pump for Bag Sampling

- 20-hour run time with rechargeable Li-lon battery
- Constant flows from 20 to 500 ml/min also suitable for sorbent tube sampling and other low flow applications
- **■** Simple operation for quick grab samples
- Program with a PC and DataTrac Pro Software for delayed start and timed runs for studies
- **■** Continuous sample volume calculations
- Quick-connect adapter accessory makes bag sampling easy (see below)





Description	Cat. No.
Pocket Pump TOUCH with Li-lon battery pack	
Requires Pocket Pump TOUCH charger Cat. No. 220-300 and adapter Cat. No. 220-200 for bag sampling;	
see below	220-1000TC
Pocket Pump TOUCH Single Charger	220-300



For negative pressure sample collection see pages 62-63

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.

Vac-U-Chamber

Eliminates Pump Contamination During Bag Sampling

- Allows direct filling of air sample bags
 - Uses negative pressure provided by most personal air sample pumps
 - Designed to contain SKC sample bags
- Rugged and airtight construction
 - Will not collapse under vacuum
- Available in several sizes, including extra large for EPA Method 0040
- Protects sample and pump 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



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.

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



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.

Small Vac-U-Chamber for 1-liter Bags

Description		Cat. No.	Qty.
Complete Vac-U-Chamber Kit includes Standard AirChek X	R5000 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 (supp	olied 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	1 1 12		
	100-240 V	210-4115	ea
Large Vac-U-Chamber only with stainless steel fittings (supp	olied without pump),		
suitable for use with SKC 8-liter sample bags below	1 17	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 (sup	plied 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



For Sample Pumps, see pages 14-15

