

INSTRUCTIONS FOR USE

SKC Breath-gas Analysis Bags, Stainless Steel Fitting

Collecting a human breath sample through the stainless steel fitting and its single-use mouthpiece, shipping the bag, and drawing the sample off with a gas-tight syringe for GC analysis, for SKC Breath-gas Analysis Bags, Cat. Nos. 249-01 (Tedlar) and 269-01 (FlexFoil PLUS).

AMTC-IN-0037

About this document

SKC Breath-gas Analysis Bags collect a sample of human breath and hold it until it is analysed for volatile organic compounds (VOCs) or volatile sulfur compounds (VSCs). The bags described here have a stainless steel breath-gas fitting: the test subject blows into the bag through a single-use plastic mouthpiece pushed onto the fitting, and the laboratory later draws the sample off through a septum in the same fitting with a gas-tight syringe, for analysis by gas chromatography (GC).

These instructions apply to the 1-litre bags with stainless steel fitting, Cat. Nos. 249-01 (Tedlar) and 269-01 (FlexFoil PLUS).

Read Product and supplied items (p. 7) and Before use (p. 8) first. Procedure (p. 9) takes you through the fitting and the sample step by step, and After use and sample handling (p. 11) covers the way to the laboratory and the removal of the sample from the bag.

Keep these instructions for the lifetime of the product. The current revision is on the product page at analyt-mtc.com.

How these instructions mark information

NOTICE

Practices not related to personal injury — damage to the product, the process or the sample.

Note
Information that helps understanding; never a hazard.

Tip
A shortcut or recommendation; never a hazard.

Document information

Title	SKC Breath-gas Analysis Bags, Stainless Steel Fitting — Instructions for use
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Language	English
Manufacturer	SKC Inc.

Revision history

Rev.	Date	Change
2	October 2026	Quality programme: new document type, number and identity pages.
1	October 2026	First issue.

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CHAPTER 1

Safety

Read the safety messages in this chapter before you use the bags. Every safety message in these instructions is a NOTICE: it protects the sample and the bag. Each message also appears at the step it belongs to.

Intended use

The bags collect one sample of human breath each and hold it until a laboratory analyses it for volatile organic compounds (VOCs) or volatile sulfur compounds (VSCs) by gas chromatography (GC). The test subject fills the bag by blowing through a single-use mouthpiece on the stainless steel breath-gas fitting. The sample leaves the bag through the septum in the same fitting, drawn off with a gas-tight syringe.

Use each bag for one sample only, at atmospheric pressure, and only for compounds that boil at or below 249.9 °F (121 °C). Carrying the bag by its fitting or hanging it from the fitting is misuse: it can damage the seal.

Gloves

Wear gloves whenever you handle the bag and its fitting. The photos in these instructions show bare hands only so that the fitting is easier to see.

Handling the bags

NOTICE

The bags are made for samples at atmospheric pressure only. A pressurised bag can burst, and the sample is lost. Do not pressurise a bag. For the same reason, never send filled bags as air freight in a cargo hold that is not pressurised. National and local regulations for packaging and transport apply.

NOTICE

A reused bag can carry residue of the previous sample, so the result is then invalid. Use each bag for one sample only. Do not reuse bags.

NOTICE

Boiling point limit. Samples of compounds with a boiling point above 249.9 °F (121 °C) are invalid in these bags. Do not use the bags for such compounds.

NOTICE

The fitting is not a handle. Carrying the bag by the fitting, or hanging the bag from it, strains the seal between fitting and film. The bag may then leak, and the handling counts as misuse. Do not carry the bag by the fitting or hang the bag from it.

Filling the bag

NOTICE

Over-inflated bag. A bag blown up into a tight dome is over-filled and under pressure. A bag under pressure can burst, and the sample is lost. Do not over-inflate the bag. Stop while the bag is still flat at the edges, as in the right-hand drawing of Figure 4-1 below.

Removing the sample

NOTICE

Needle size. A needle thicker than 12 gauge can damage the septum. Use a needle no thicker than 12 gauge: an outside diameter of 0.109 in at most.

NOTICE

When you push the needle through the septum, it can go on into the bag film. It then punctures the film and damages the bag. Keep the needle tip inside the septum.

CHAPTER 2

Product and supplied items

The bag and its fitting

Each bag is made of Tedlar or FlexFoil PLUS film and holds 1 litre. The stainless steel breath-gas fitting does two jobs:

- **Filling.** The single-use plastic mouthpiece fits onto the top of the fitting. Turning the knurled disc opens and closes the fitting.
- **Emptying.** A septum port in the centre of the fitting takes the needle of a gas-tight syringe, which draws the sample off for GC analysis.

Every pack holds 5 bags and 5 clean mouthpieces, each mouthpiece packed on its own.



Figure 2-1. Stainless steel breath-gas fitting with the plastic mouthpiece fitted, on a FlexFoil PLUS bag.

CHAPTER 3

Before use

A breath-gas bag is a single-use container for one sample of breath at atmospheric pressure. Handle it with gloves, fill it once, and get it to the laboratory without delay.

Rules for bag sampling

Note
Wear gloves whenever you handle the bag and its fitting. The photos in these instructions show bare hands only to make the fitting easier to see.

NOTICE

The bags are made for samples at atmospheric pressure only. A pressurised bag can burst, and the sample is lost. Do not pressurise a bag. For the same reason, never send filled bags as air freight in a cargo hold that is not pressurised. National and local regulations for packaging and transport apply.

NOTICE

A reused bag can carry residue of the previous sample, so the result is then invalid. Use each bag for one sample only. Do not reuse bags.

Tip
Analyse promptly. Bags are not suitable for storing samples for a long time. Plan the sampling so that the laboratory can analyse the bag soon after it is filled.

NOTICE

Boiling point limit. Samples of compounds with a boiling point above 249.9 °F (121 °C) are invalid in these bags. Do not use the bags for such compounds.

NOTICE

The fitting is not a handle. Carrying the bag by the fitting, or hanging the bag from it, strains the seal between fitting and film. The bag may then leak, and the handling counts as misuse. Do not carry the bag by the fitting or hang the bag from it.

Note
FlexFoil film can show small crimps and creases from manufacture, quality testing or handling. They change only the look of the bag, not how it performs.

CHAPTER 4

Procedure

Fit a fresh mouthpiece, open the fitting, let the test subject blow the sample into the bag, and close the fitting straight away. Wear gloves whenever you handle the bag and its fitting (see Safety (p. 5)). The number on a photo is given in brackets in the step it shows, for example (photo 1).

Preparing the fitting

1. Take a clean mouthpiece out of its packaging. Each mouthpiece is for one sample only.
2. Push the narrow end of the mouthpiece gently down onto the stainless steel fitting until it sits firmly (photo 2).



Collecting the sample

1. Lay the bag on a flat surface.
2. Turn the knurled disc of the fitting counter-clockwise, by no more than two turns (photo 1). The fitting is now open.



3. Explain to the test subject how to breathe for your test.



> **NOTICE**
>
> **Over-inflated bag.** A bag blown up into a tight dome is over-filled and under pressure. A bag under pressure can burst, and the sample is lost. Do not over-inflate the bag. Stop while the bag is still flat at the edges, as in the right-hand drawing of Figure 4-1 below.

4. Have the subject put their lips on the mouthpiece and blow into the bag (photo 2).
5. Have the subject stop blowing when the bag holds the sample volume you need.

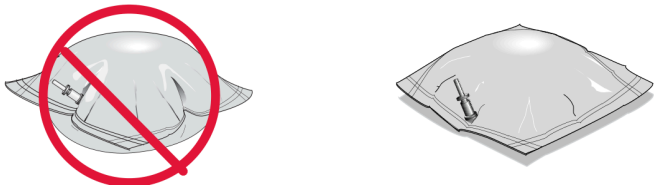
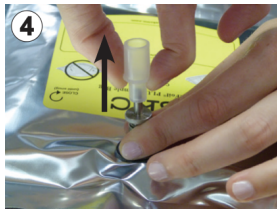


Figure 4-1. Left: over-inflated — wrong. Right: correctly filled.

6. As soon as the subject has finished, take the mouthpiece away from their lips.
7. Turn the knurled disc clockwise straight away until it is snug (photo 3). The fitting is now closed.



8. Hold the stainless steel fitting with one hand and, with the other, gently pull the mouthpiece off, twisting it slightly (photo 4).
9. **Discard the mouthpiece.** Used mouthpieces can go in the ordinary waste.



CHAPTER 5

After use and sample handling

Shipping the bags

To send filled bags to a laboratory, pack them in their original packaging. Send them without delay, and observe the national and local regulations for packaging and transport. Do not send them as air freight in a cargo hold that is not pressurised (see Rules for bag sampling (p. 8)).

Removing the sample from the bag

Wear gloves whenever you handle the bag and its fitting (see Safety (p. 5)).

The sample is drawn off through the septum port in the centre of the stainless steel fitting, with a gas-tight syringe and needle.

NOTICE

Needle size. A needle thicker than 12 gauge can damage the septum. Use a needle no thicker than 12 gauge: an outside diameter of 0.109 in at most.

NOTICE

When you push the needle through the septum, it can go on into the bag film. It then punctures the film and damages the bag. Keep the needle tip inside the septum.

1. Insert the needle of the gas-tight syringe carefully into the septum port in the centre of the fitting, and pierce the septum.
2. Draw the sample into the syringe.
3. Analyse the sample.

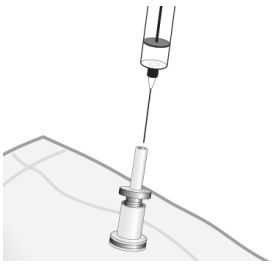


Figure 5-1. Needle in the septum port.

Further reading. P. Mochalski, B. Wzorek, I. Śliwka, A. Amann: Suitability of different polymer bags for storage of volatile sulfur compounds relevant to breath analysis. *Journal of Chromatography B*, vol. 877, issue 3, 15 January 2009, pp. 189–196.

Disposal

Dispose of used bags and their packaging under local regulations.

CHAPTER 6

Ordering information

Order from Analyt-MTC with the order codes.

Description	Pack	Order code
Breath-gas Analysis Bags, Tedlar, 1 litre, stainless steel fitting	5 bags, 5 mouthpieces	249-01
Breath-gas Analysis Bags, FlexFoil PLUS, 1 litre, stainless steel fitting	5 bags, 5 mouthpieces	269-01
Replacement mouthpieces	10	P20054

For other applications, SKC sample bags come in Tedlar, Standard FlexFoil and FlexFoil PLUS film, with fittings of stainless steel, polypropylene or PTFE, in sizes up to 100 litres. SKC also makes bags to customer specification. Ask Analyt-MTC.

CHAPTER 7

Service and contacts

SKC Breath-gas Analysis Bags are made by SKC. Analyt-MTC is your contact for them.

Ordering and support

ANALYT-MTC Messtechnik GmbH

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www.analyt-mtc.com

Ordering and questions

Analyt-MTC supplies the bags and the replacement mouthpieces, and answers your questions about breath sampling, other sample bags and custom bags. Order with the catalogue numbers in Ordering information (p. 12). Warranty and returns follow the terms of Analyt-MTC.

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