ANALYT MESSTECHNIK




INSTRUCTIONS FOR USE

# SKC Breath-gas Analysis Bags with Polypropylene Fitting

How to collect a human breath sample in an SKC breath-gas analysis bag with polypropylene fitting, 249-01-PP or 269-01-PP, ship it, and draw it off with a gas-tight syringe for GC analysis.

AMTC-IN-0036

# About this document

SKC breath-gas analysis bags with polypropylene fitting, catalogue numbers 249-01-PP and 269-01-PP, collect and hold samples of human breath. A laboratory then analyses the breath for volatile organic compounds (VOCs) or volatile sulfur compounds (VSCs) by gas chromatography (GC). The bags are made of Tedlar or FlexFoil PLUS film. A fitting adapter and a single-use plastic mouthpiece on the side of the fitting let the test subject blow straight into the bag, and the septum on top of the fitting lets a gas-tight syringe draw the sample off again.

Product and supplied items (p. 7) names the parts of the fitting, and Before use (p. 8) gives the rules for handling the bags. Procedure (p. 9) takes you from a new bag to a closed, filled bag. After use and sample handling (p. 11) covers shipping the bags and the syringe, and Ordering information (p. 12) the bag types and how to reorder them.

Bags with a stainless-steel fitting, 249-01 and 269-01, are handled differently and have their own guide.

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 with Polypropylene Fitting — Instructions for use |
| Document number | AMTC-IN-0036 |
| Revision | Rev. 2 — October 2026 |
| Applies to | SKC breath-gas analysis bags with polypropylene fitting, 249-01-PP (Tedlar) and 269-01-PP (FlexFoil PLUS) |
| 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. |

SKC, FlexFoil and Tedlar are trademarks of their owners. Information in these instructions is subject to change without notice. © 2026 ANALYT-MTC Messtechnik GmbH. All rights reserved.

# Contents


1 **Safety** 5
- Intended use 5
- Gloves 5
- Handling the bags 5
- Filling the bag 6
- Removing the sample 6

2 **Product and supplied items** 7
- The bag and its fitting 7

3 **Before use** 8
- Rules for the bags 8

4 **Procedure** 9
- Prepare the fitting 9
- Fill the bag 9

5 **After use and sample handling** 11
- Send the bags to the laboratory 11
- Removing the sample 11
  - Draw off the sample 11
- Disposal 11

6 **Ordering information** 12

7 **Service and contacts** 13

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 in the fitting adapter. The sample leaves the bag only through the septum, 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, the fitting, the fitting adapter or the mouthpiece. The photos in these instructions show bare hands only so that the parts are easier to see.

## Handling the bags

**NOTICE**

The bags take 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 by air freight in an unpressurised cargo hold.

**NOTICE**

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

**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**

**The fitting is not a handle.** Carrying the bag by the fitting, or hanging it from the fitting, strains the seal. The seal can be damaged, and the bag then leaks. Do not carry the bag by the fitting or hang the bag from it.

## Filling the bag

**NOTICE**

**Do not over-inflate the bag.** A bag blown up taut is under pressure and can burst. The sample is then lost. Stop before the bag is blown up taut (Figure 4-5 (p. 10)).

## Removing the sample

**Note**

**Needle size.** Use a needle no thicker than 22 gauge: outside diameter at most 0.028 in. A higher gauge number is a thinner needle.

**NOTICE**

**Pierce the septum only.** When you pierce the septum, the needle can go on into the bag film. It then punctures the film and damages the bag. Keep the needle tip inside the septum area.

CHAPTER 2

# Product and supplied items

The SKC breath-gas analysis bags 249-01-PP and 269-01-PP collect and hold one sample of human breath each, which a laboratory analyses for volatile organic compounds (VOCs) or volatile sulfur compounds (VSCs) by gas chromatography.

## The bag and its fitting

The polypropylene fitting is sealed into the bag film. Its upper part, the septum body with the septum cap on top, turns to open and close the fitting; the side stem stays still. For sampling, a fitting adapter is pushed over the side stem and a mouthpiece into the adapter. Both come clean and packed, and both are single-use.

The parts in Figure 2-1 (p. 7):

1. **Septum cap**, white or brown, with the syringe port in its centre.
2. **Septum body**; it turns together with the cap.
3. **Side stem** of the fitting.
4. **Fitting adapter**, narrow end over the side stem.
5. **Mouthpiece**, small end in the adapter.

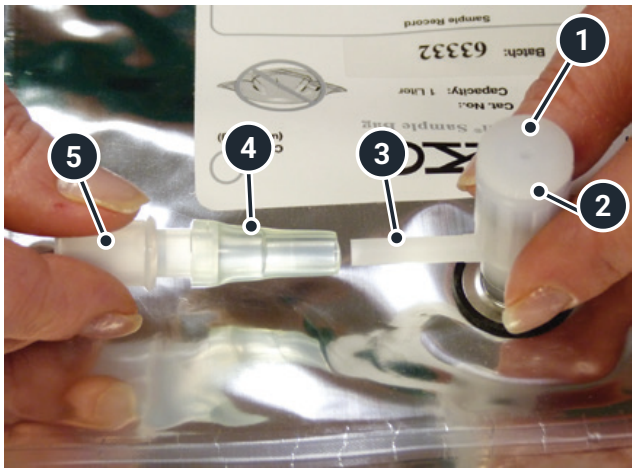



**Figure 2-1.** Fitting with adapter and mouthpiece, ready for sampling. Parts numbered as in the list beside it.

CHAPTER 3

# Before use

## Rules for the bags

These rules apply to every breath sample. They protect the sample, the bag and the fitting.

**Note**
Wear gloves whenever you handle the bag, the fitting, the adapter or the mouthpiece. The photos in these instructions show bare hands only so that the parts are easier to see.

**NOTICE**

The bags take 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 by air freight in an unpressurised cargo hold.

**NOTICE**

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

**Tip**
**Analyse samples promptly.** The bags are not meant for storing samples over a long time.

**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**

**The fitting is not a handle.** Carrying the bag by the fitting, or hanging it from the fitting, strains the seal. The seal can be damaged, and the bag then leaks. Do not carry the bag by the fitting or hang the bag from it.

**Note**
Bags of 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.

Follow the warnings and cautions in these instructions. Warranty matters follow Analyt-MTC's terms of sale.

CHAPTER 4

# Procedure

One sample needs one bag, one clean fitting adapter and one clean mouthpiece. Wear gloves throughout (see Rules for the bags (p. 8)).

## Prepare the fitting

1. Unpack one clean fitting adapter.
2. Unpack one clean mouthpiece.
3. Push the smaller end of the mouthpiece into the larger opening of the fitting adapter (Figure 4-1 (p. 9)).
4. Gently push the narrow end of the fitting adapter over the side stem of the fitting on the bag (Figure 4-2 (p. 9)).



**Figure 4-1.** Mouthpiece into the adapter.



**Figure 4-2.** Adapter onto the side stem.

## Fill the bag

1. Lay the bag on a flat surface.

   > **Note**
   > **Do not turn the side stem.** Hold it still; turn only the upper part of the fitting.

2. Hold the side stem still.
3. Turn the whole upper part of the fitting, septum body and septum cap together, one full turn counterclockwise (Figure 4-3 (p. 9)). The fitting is open.



**Figure 4-3.** Open: one turn counterclockwise.

**NOTICE**

**Do not over-inflate the bag.** A bag blown up taut is under pressure and can burst. The sample is then lost. Stop before the bag is blown up taut (Figure 4-5 (p. 10)).

4. Tell the test subject how to breathe. The subject puts the lips on the mouthpiece and blows into the bag until it holds the sample volume you need (Figure 4-4 (p. 10)).



**Figure 4-4.** Blow into the mouthpiece.



**Wrong:** over-inflated, taut

**Right:** filled, not taut

**Figure 4-5.** How full to fill the bag.

5. Once the bag holds the sample, have the subject take the mouthpiece from the lips.
6. Close the fitting at once: hold the side stem still and turn the whole upper part of the fitting clockwise until it is snug (Figure 4-6 (p. 10)). The fitting is closed.
7. Hold the fitting with one hand and pull the fitting adapter, with the mouthpiece in it, off the side stem with the other (Figure 4-7 (p. 10)).
8. Throw the adapter and the mouthpiece away with ordinary waste. They are single-use.



**Figure 4-6.** Close: clockwise until snug.



**Figure 4-7.** Adapter and mouthpiece off.

CHAPTER 5

# After use and sample handling

## Send the bags to the laboratory

Put the filled bags back into their original packaging and ship them to the laboratory. Send them promptly: the bags do not hold samples for long. Follow the packaging and transport regulations that apply to the shipment, and do not let the bags travel by air freight in an unpressurised cargo hold (see Rules for the bags (p. 8)).

## Removing the sample

The sample leaves the bag through the septum in the septum cap: a gas-tight syringe pierces the septum and draws off the breath for GC analysis.

### Draw off the sample

**Note**
**Needle size.** Use a needle no thicker than 22 gauge: outside diameter at most 0.028 in. A higher gauge number is a thinner needle.

**NOTICE**

**Pierce the septum only.** When you pierce the septum, the needle can go on into the bag film. It then punctures the film and damages the bag. Keep the needle tip inside the septum area.

1. Fit the needle to a gas-tight syringe. Insert the needle carefully into the syringe port in the centre of the septum cap, white or brown, and pierce the septum (Figure 5-1 (p. 11)).
2. Draw the sample into the syringe.
3. Analyse the sample.

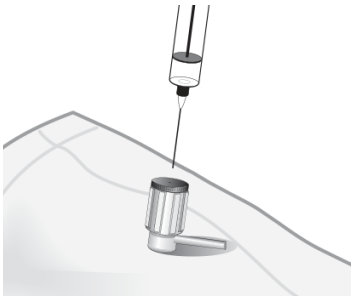


**Figure 5-1.** Needle into the syringe port.

**Note**
**Further reading.** P. Mochalski, B. Wzorek, I. Sliwka and A. Amann, “Suitability of different polymer bags for storage of volatile sulfur compounds relevant to breath analysis”, *Journal of Chromatography B* 877 (3), 15 January 2009, pp. 189–196, DOI 10.1016/j.jchromb.2008.12.003. For stability data of samples in SKC bags, ask Analyt-MTC.

## 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 bag**, Tedlar, polypropylene fitting, 1 litre | 5 | 249-01-PP |
| **Breath-gas analysis bag**, FlexFoil PLUS, polypropylene fitting, 1 litre | 5 | 269-01-PP |
| ACCESSORY | | |
| **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

## Contact and support

**ANALYT-MTC Messtechnik GmbH**

**German Headquarters**

Klosterrunsstraße 18, 79379 Müllheim
Germany

+49 7631 5545

info@analyt-mtc.de

**French Subsidiary**

175 Avenue d'Alsace, 68000 Colmar
France

+33 3 89 41 47 78

info@analyt-mtc.fr

www.analyt-mtc.com

**Before you call**

Have the following at hand so that Analyt-MTC can help you quickly:

- the catalogue number of the bag, 249-01-PP or 269-01-PP;
- the batch number on the bag label;
- the compounds you sample for, and the laboratory that analyses the samples.

SKC Breath-gas Analysis Bags are made by SKC. Analyt-MTC answers technical questions on the bags and handles warranty matters and returns under its terms of sale. The Analyt-MTC contact details are above and on the back cover.

**ANALYT-MTC Messtechnik GmbH**

Sales, service and calibration

**German Headquarters**
Klosterrunsstraße 18, 79379 Müllheim
Germany
+49 7631 5545
info@analyt-mtc.de

**French Subsidiary**
175 Avenue d'Alsace, 68000 Colmar
France
+33 3 89 41 47 78
info@analyt-mtc.fr

**www.analyt-mtc.com**

AMTC-IN-0036 · Rev. 2 · 2026-10

© 2026 ANALYT-MTC Messtechnik GmbH. All rights reserved. Subject to technical changes without notice.