ANALYT MESSTECHNIK



INSTRUCTIONS FOR USE

SKC VOC Chek 575 Series Passive Samplers

Selection, storage, sampling and laboratory analysis for the SKC VOC Chek 575 Series passive samplers 575-001 and 575-002 for organic vapours, 575-005 for ethylene oxide and 575-006 for styrene.

AMTC-IN-0039

Rev. 2 · October 2026

About this document

These instructions explain how to use the SKC VOC Chek 575 Series passive samplers for personal exposure monitoring: 575-001 and 575-002 for organic vapours, 575-005 for ethylene oxide and 575-006 for styrene. It covers choosing and storing the sampler, taking a sample, and what the laboratory does with it: desorption and the calculation of the concentration.

Read Safety (p. 5) first. Next, use Product and supplied items (p. 6) to pick the right model, Before use (p. 7) to store it correctly, then follow Procedure (p. 8) step by step. After use and sample handling (p. 10) is written for the laboratory; pass it on with your samples. Part numbers are in Ordering information (p. 12).

A passive sampler needs no pump and no flow calibration: the vapour reaches the sorbent by diffusion, at a sampling rate fixed by the sampler and the compound. What you must record is the sampling time, and the temperature and pressure at the sampling site.

The methanol sampler 575-007 has a secondary diffusion barrier and its own operating instructions, document AMTC-IN-0046; ask Analyt-MTC for a copy.

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

⚠ CAUTION

A hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

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

Note
Information that helps understanding; never a hazard.

Document information

Title	SKC VOC Chek 575 Series Passive Samplers — Instructions for use
Document number	AMTC-IN-0039
Revision	Rev. 2 — October 2026
Applies to	SKC passive samplers 575-001, 575-002, 575-005 and 575-006, all pack sizes
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 this chapter before you use the samplers. Its safety messages are repeated where they apply in the chapters that follow.

Intended use

The SKC VOC Chek 575 Series passive samplers are for personal exposure monitoring: 575-001 and 575-002 for organic vapours, 575-005 for ethylene oxide and 575-006 for styrene. Choose the model whose sorbent suits the compound you want to measure (see Models at a glance (p. 6)), and have the sample analysed by the method validated for that compound. Do not store samplers with food, neither unused samplers nor samplers after sampling.

Protecting the sample

NOTICE

Removing the plastic plug on the back of the sampler voids the sample. Never remove it. Only the cap on the front comes off for sampling.

NOTICE

Follow the validated method. The 575 samplers are validated for specific compounds according to specific methods. A desorption solvent other than the one the method states, or any other change to the method, can give inaccurate results. Use the validated method and its desorption solvent.

⚠ CAUTION

Do not store samplers with food. Samplers stored next to food can contaminate it, and eating contaminated food can harm you. This applies to unused samplers and to samplers after sampling.

CHAPTER 2

Product and supplied items

Each 575 sampler is a small nylon badge with a clip, filled with a solvent-desorbable sorbent. Four models share the same housing and differ in the sorbent, and so in the compounds they collect.

Choose the model whose sorbent suits the analysis of the compound you want to measure. For 575-001 and 575-002, the compound decides the sampling rate, the sampling time and the concentration range; the SKC 575 Series sampler guide lists these values compound by compound, together with the desorption solvent. Ask Analyt-MTC for the guide, or for help with the choice.

Models at a glance

	575-001	575-002	575-005	575-006
Compounds	organic vapours	organic vapours	ethylene oxide	styrene
Sorbent	Anasorb CSC, 350 mg	Anasorb 747, 500 mg	Anasorb 747 treated with hydrobromic acid, 500 mg	Anasorb 747 treated with tert-butyl catechol, 500 mg
Concentration range	depends on the compound		0.1–4 ppm	0.1–202 ppm
Sampling rate	depends on the compound (see the 575 sampler guide)		21.2 mL/min	13.55 mL/min
Sampling time	validated for 15 min and 8 h; laboratory and field studies with several compounds show 24 h sampling is possible		validated for 15 min and 8 h	validated for 15 min and 8 h; not for peak sampling
Analysis	solvent desorption, GC/FID		solvent desorption, GC/ECD	solvent desorption, GC/FID
Housing	nylon; 1.4 in (3.5 cm) diameter, 2.5 in (6.3 cm) long with the clip, 0.6 in (1.5 cm) deep			

GC/FID: gas chromatography with flame ionisation detector. GC/ECD: gas chromatography with electron capture detector.

Note
The styrene sampler 575-006 is validated for 15-minute and 8-hour samples, but it cannot be used for peak sampling.

CHAPTER 3

Before use

Storage and shelf life

Shelf life is limited: check the expiry date on the packaging before you use a sampler. A sampler stored below 4 °C must reach the ambient temperature before you start sampling.

⚠ CAUTION

Do not store samplers with food. Samplers stored next to food can contaminate it, and eating contaminated food can harm you. This applies to unused samplers and to samplers after sampling.

Model	Before use	After sampling
575-001, 575-002	At ambient temperature or below 4 °C (39.2 °F). Below 4 °C is recommended: it keeps the background low.	As the method for the compound specifies. Ship to the laboratory by express.
575-005	Below 4 °C (39.2 °F).	Below 4 °C (39.2 °F), for up to 3 weeks. Ship to the laboratory by express.
575-006	At ambient temperature or below 4 °C (39.2 °F). Below 4 °C is recommended: it keeps the background low.	At ambient temperature or below 4 °C (39.2 °F), for up to 2 weeks.

Before you start

- Check the expiry date, and that the model suits the compound (see Models at a glance (p. 6)).
- Let a sampler stored below 4 °C reach the ambient temperature.
- Have a pen, a watch, a thermometer and a barometer at hand, and the blank samplers your method requires.

NOTICE

Removing the plastic plug on the back of the sampler voids the sample. Never remove it. Only the cap on the front comes off for sampling.

CHAPTER 4

Procedure

The sampler is worn on the worker's clothing in the breathing zone for the sampling period. The front of the sampler, under the cap, is perforated with small holes through which the vapours diffuse to the sorbent. The back is closed with a plastic plug that stays in place until the laboratory opens the sampler.

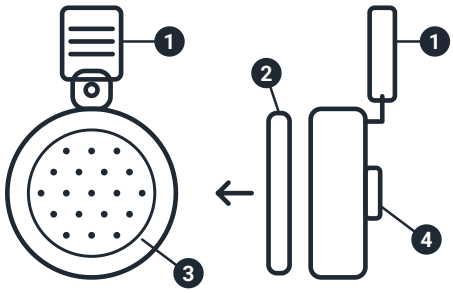


Figure 4-1. Front view, cap removed (left), and side view (right). (1) Clip. (2) Cap, off during sampling. (3) Diffusion holes. (4) Plastic plug: never remove.

Take the sample

1. Take the sampler out of its sealed pouch. **Keep the pouch:** it protects the sampler on the way to the laboratory.
2. On the label of the pouch, write the date, the start time and the sampler ID number, which is printed on the sampler.
3. Take the cap off the front of the sampler and put it aside safely. Leave the plug on the back in place. Clip the sampler to the worker's clothing in the breathing zone, with the small holes facing out. **Keep the holes free:** nothing may cover them, no rain, spray or splashing chemicals may reach them, and dirty fingers or gloves must not touch the sampler.
4. At the end of the sampling period, unclip the sampler from the clothing and put the cap back on the front.
5. Write the stop time on the label of the pouch. Measure the ambient temperature and the atmospheric pressure and write them down: the laboratory needs them to calculate the concentration (see Calculating the concentration (p. 10)).



Figure 4-2. Step 1: taking the sampler out of its pouch.



Figure 4-3. Step 2: writing the date, the start time and the sampler ID on the pouch label.

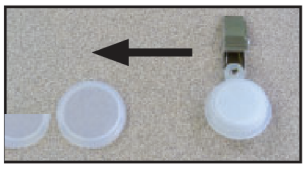


Figure 4-4. Step 3: the cap comes off the front of the sampler; the plug on the back stays.

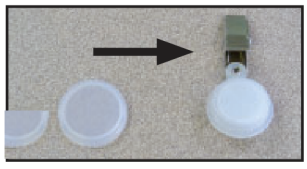


Figure 4-5. Step 4: at the end of sampling the cap goes back on the front.



Figure 4-6. Step 5: writing the stop time on the pouch label.



Figure 4-7. Step 6: the sampler in its pouch goes to the laboratory.

6. Put the sampler back into its pouch and close it. Send it to an accredited laboratory, with the blanks and the sampling information: sampler ID, date, start and stop times, temperature, pressure and the compound to analyse. Express shipping is recommended. Until it ships, store it as Storage and shelf life (p. 7) describes.

CHAPTER 5

After use and sample handling

This chapter is for the laboratory. The sorbent is desorbed with a solvent and analysed by gas chromatography (see Models at a glance (p. 6) for the detector); the concentration in air follows from the mass found, the sampling rate and the sampling time.

NOTICE

Follow the validated method. The 575 samplers are validated for specific compounds according to specific methods. A desorption solvent other than the one the method states, or any other change to the method, can give inaccurate results. Use the validated method and its desorption solvent.

Desorption

1. Take the small plug out of the back of the sampler. Lift out the foam disc with tweezers.
2. Transfer the sorbent into a vial. Tap the sampler lightly so that every sorbent particle leaves it.
3. Add 2 mL of the recommended desorption solvent to the vial.
4. Close the vial with a PTFE-lined cap.

The desorption solvent, the desorption time and the desorption efficiency for each compound are listed in the SKC 575 Series sampler guide. To determine the desorption efficiency yourself, use the desorption efficiency tubes: each single-section tube holds the same sorbent, in the same amount, as the matching sampler (see Ordering information (p. 12)).

Calculating the concentration

The concentration of the compound in air, in ppm, is:

$$C = \frac{SW \times 24.45 \times 10^6}{DE \times MW \times SR \times MIN \times PT}$$

C	concentration of the compound, ppm
SW	sample weight found by analysis, mg
DE	desorption efficiency, as a decimal (98 % = 0.98)
MW	molecular weight of the compound
SR	sampling rate, mL/min
MIN	sampling time, min
PT	pressure and temperature correction

The equation holds for 25 °C (298 K) and standard atmospheric pressure, 760 mmHg. At any other site temperature or pressure, apply the correction factor

$$PT = (T_1 / T_2)^{1.5} \times (P_2 / P_1)$$

with T_1 the temperature at the sampling site in kelvin, T_2 = 298 K, P_1 the pressure at the sampling site and P_2 = 760 mmHg. Give both pressures in the same unit.

Example: toluene

Sampled at 38 °C and 695 mmHg, so PT = 1.166. The analysis found 3.03 mg; with DE = 0.99, MW = 92.14, SR = 14.5 mL/min and a sampling time of 480 min:

$$C = \frac{3.03 \times 24.45 \times 10^{6}}{0.99 \times 92.14 \times 14.5 \times 480 \times 1.166} = 100 \text{ ppm}$$

Disposal

Dispose of used samplers and their packaging under local regulations.

Further reading

- Cassinelli, M. E., Hull, R. D., Crable, J. V., Teass, A. W.: NIOSH protocol for the evaluation of passive monitors. In: Berlin, A., Brown, R. H., Saunders, K. J. (eds.): *Diffusive Sampling: An Alternative to Workplace Air Monitoring*. Royal Society of Chemistry, London, 1987, pp. 190–202.
- Guild, L. V., Myrmel, K. H., Myers, G., Dietrich, D. F.: Bi-level passive monitor validation: a reliable way of assuring sampling accuracy for a larger number of related chemical hazards. *Applied Occupational and Environmental Hygiene* 7 (5), May 1992, pp. 310–317.

SKC publishes validation reports for the 575 samplers; ask Analyt-MTC for the report on your compound.

CHAPTER 6

Ordering information

Order from Analyt-MTC with the order codes.

Ordering information

Passive sampler for	Sorbent, amount	Pack	Order code
SAMPLERS			
Organic vapours	Anasorb CSC, 350 mg	5	575-001
		25	575-001A
		100	575-001B
		500	575-001C
Organic vapours	Anasorb 747, 500 mg	5	575-002
		25	575-002A
		100	575-002B
		500	575-002C
Ethylene oxide	Anasorb 747 treated with hydrobromic acid, 500 mg	5	575-005
		25	575-005A
Styrene	Anasorb 747 treated with tert-butyl catechol, 500 mg	5	575-006
Methanol [a]	Anasorb 747, 500 mg, with a secondary diffusion barrier	5	575-007
DESORPTION EFFICIENCY TUBES, FOR THE LABORATORY			
for 575-001 samplers		10	575-048
for 575-002 and 575-007 samplers		10	575-049
for 575-005 samplers		10	575-051

Desorption efficiency tubes for 575-006 samplers: ask Analyt-MTC. (a) The methanol sampler 575-007 has its own operating instructions (AMTC-IN-0046). Desorption efficiency tubes: each single-section tube holds the same sorbent, in the same amount, as the matching sampler.

CHAPTER 7

Service and contacts

Contact and support

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info@analyt-mtc.fr

www.analyt-mtc.com

Before you call

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

- the catalogue number of the sampler (for example 575-002);
- the compound you want to measure and the method you work to;
- the expected concentration and sampling time.

Contact Analyt-MTC to order samplers and desorption efficiency tubes, for the SKC 575 Series sampler guide, and for help choosing the sampler for your compound. Warranty matters and returns are handled under Analyt-MTC's terms of sale. Analyt-MTC's contact details are in this chapter and on the back cover.

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