ANALYT MESSTECHNIK



OPERATING MANUAL

SKC IFV Pro Sampler

Assembly, flow rate verification, sampling and cleaning for the SKC IFV Pro Sampler, Cat. No. 225-49, which collects the aerosol and the vapour phase of a contaminant together at 1 L/min, with the filter and sorbent tube selection guide.

AMTC-MN-0028

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About this manual

The SKC IFV Pro Sampler collects a contaminant that is present both as an aerosol and as a vapour, in one sample. A stainless steel sampling head with an inhalable inlet holds a 25 mm filter for the aerosol phase; a sorbent tube behind it collects the vapour phase. This manual covers preparing the sampler, verifying the flow rate, sampling, shipping the samples and cleaning, and lists the recommended media, the technical data and the order numbers.

Start with Product description (p. 6), then follow Operation (p. 8) in its order: preparing the sampler, Flow rate verification (p. 10) and Sampling (p. 11). Clean the sampling head as described in Maintenance (p. 14). The sampling method you work to sets the filter, the sorbent tube, the sampling time and the analysis; this manual does not replace it.

The manual applies to the IFV Pro Sampler, Cat. No. 225-49, and the IFV Pro Sampler Kit. Analyt-MTC supplies and supports them; for spare parts and service see Ordering information (p. 16).

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

How this manual marks 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.

Numbers in brackets, such as (3), refer to the parts in the figure named in the same section.

Document information

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Applies to	SKC IFV Pro Sampler, Cat. No. 225-49, and IFV Pro Sampler Kit, Cat. No. 225-49K
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Revision history

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

Safety

Read the safety message in this chapter before you use the IFV Pro. It also appears in the procedure where it applies, and it protects the sample.

Intended use

The IFV Pro is a personal sampler for contaminants that are present in the air as an aerosol and as a vapour at the same time. It collects the inhalable aerosol phase on a 25 mm filter and the vapour phase on an 8 × 110 mm sorbent tube, both chosen for the compound you sample (see Filter and sorbent tube selection (p. 13)). Wear it on the worker's clothing in the breathing zone and use it with a sample pump that holds a constant flow of 1 L/min (see Product description (p. 6)).

Protective equipment

Wear powder-free gloves when you handle the filter cassettes, and pick up filters only with forceps.

Sampling media

NOTICE

Keep the media clean. Moisture, dust or other contamination can transfer to the sampling media and make the sample invalid. Handle the cassettes with powder-free gloves and pick up filters only with forceps.

CHAPTER 2

Product description

Some contaminants are present in the air as an aerosol and as a vapour at the same time. The IFV Pro collects both phases simultaneously, at a constant flow rate of 1 L/min.

Air enters the sampling head (2) through an inhalable inlet of the IOM type. The aerosol phase stays on a 25 mm filter held in a stainless steel filter cassette inside the head. The air then passes through the tube holder (3), a rubber sleeve on the outlet of the head, into a sorbent tube (4) that collects the vapour phase. Tubing (6) leads from the end of the sorbent tube to the sample pump.

A plastic tube cover (5), open at both ends, protects the sorbent tube; it screws onto the base of the sampling head. The clip (1) holds the sampler on the worker's clothing.

Choose the filter and the sorbent tube for the compound you sample: the sorbent tubes are 8 × 110 mm, and the recommended media for 54 compounds are listed in Filter and sorbent tube selection (p. 13). Use a sample pump that holds a constant flow of 1 L/min.

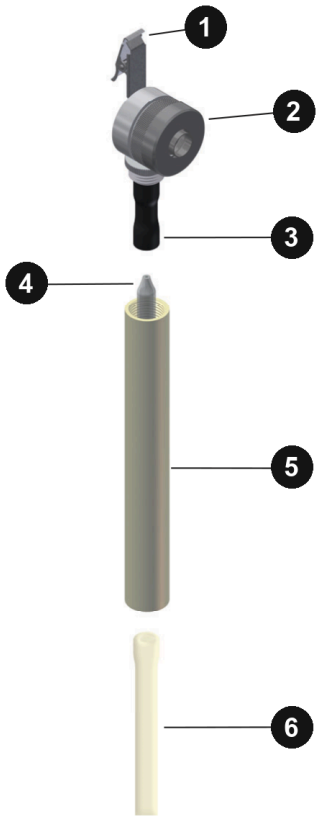


Figure 1. IFV Pro sampler. (1) Clip. (2) Sampling head, aerosol phase; holds the 25 mm filter. (3) Tube holder (rubber sleeve). (4) Sorbent tube, vapour phase. (5) Protective tube cover. (6) Tubing to the pump.

The sampling head

The filter cassette (3, 5) sits on an O-ring (2) in the housing (1) and is held in place by the front plate (6), which screws onto the housing. The cassette inlet (8) protrudes through the front plate; the cap (7) closes it until you sample. Figure 2 (p. 7) shows the parts in the order you assemble them.

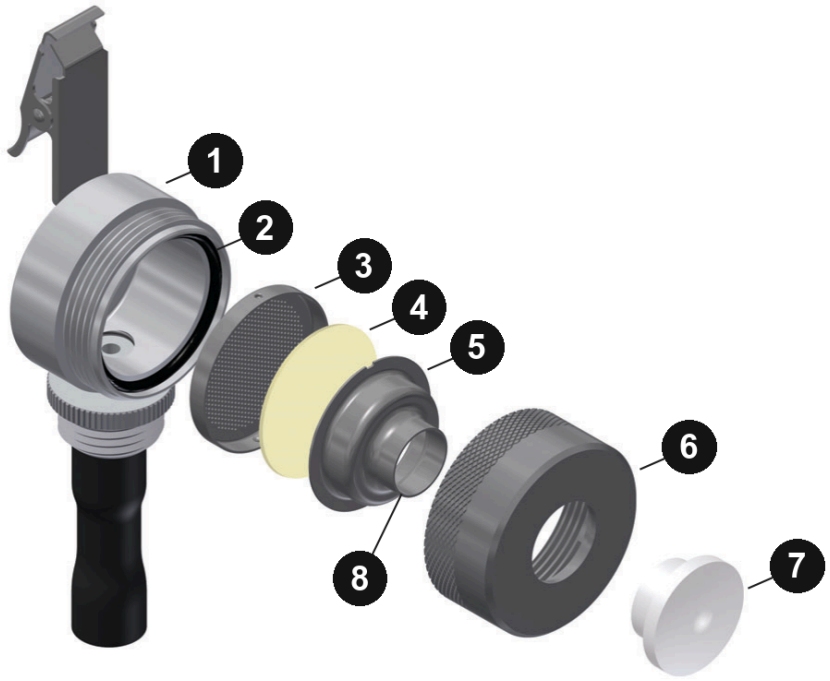


Figure 2. Sampling head and filter cassette, exploded. (1) Housing. (2) O-ring, in the top of the housing. (3) Cassette bottom, with support grid. (4) Filter, 25 mm. (5) Cassette top. (6) Front plate. (7) Cap. (8) Cassette inlet.

What you need

- the IFV Pro sampler, with a new tube holder (rubber sleeve) for each sample;
- a 25 mm filter and an 8 × 110 mm sorbent tube, as your method specifies (Filter and sorbent tube selection (p. 13)), with the caps for the sorbent tube ends;
- a tube breaker to open the sorbent tube;
- powder-free gloves and forceps for handling the cassette and the filter;
- a sample pump that holds a constant flow rate of 1 L/min, and flexible tubing, 1/4 in inside diameter;
- for flow rate verification: a flowmeter and the calibration adapter 225-361 (included in the IFV Pro Sampler Kit).

Catalogue numbers of the sampler and its accessories: see Ordering information (p. 16).

CHAPTER 3

Operation

Load a filter into the cassette, put the cassette into the sampling head, then fit the sorbent tube and its cover. Numbers in brackets refer to the parts in the figure named in each section.

NOTICE

Keep the media clean. Moisture, dust or other contamination can transfer to the sampling media and make the sample invalid. Handle the cassettes with powder-free gloves and pick up filters only with forceps.

Open the sampling head

Numbers refer to Figure 2 (p. 7).

1. Take the white cap (7) off the inlet and put it aside.
2. Unscrew the front plate (6) and take it off.
3. Take out the filter cassette.

Load the filter

Numbers refer to Figure 3 (p. 8).

Tip
Put the cap on the cassette inlet first: it gives you a better grip when you open the cassette.

1. Open the cassette: turn the cassette top (2) in the cassette bottom (5) until the notch (1) in the top lines up with one of the two bumps (4) on the bottom. Tilt the notched side up and lift the top off.
2. With forceps, lay a 25 mm filter (3) on the support grid in the cassette bottom.
3. Close the cassette: line the notch up with one of the bumps, and slide the opposite edge of the top under the opposite bump. Lower the top into the bottom and turn it to lock the cassette.

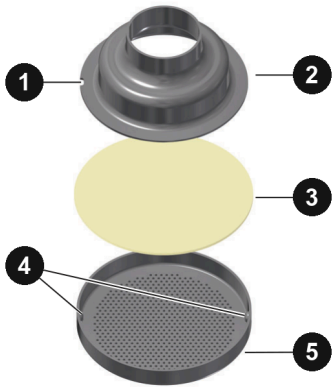


Figure 3. Filter cassette, exploded. (1) Notch. (2) Cassette top. (3) Filter. (4) Bumps. (5) Cassette bottom.

Carry loaded cassettes

If you will not sample straight away, or you are taking loaded cassettes to the sampling site, put each cassette — with the cap on its inlet — into its transport container. Check that the foam insert is in the lid of the container (Figure 4 (p. 9)).

You can also carry the cassette already installed in the sampling head (Install the cassette (p. 9)), with the cap on the inlet, in a plastic bag or another suitable container.



Figure 4. Cassette in the transport container. (1) Foam insert, in the lid. (2) Cap on the cassette inlet. (3) Filter cassette.

Install the cassette

1. Check that the O-ring sits correctly in the top of the housing (Figure 2 (p. 7), parts 2 and 1). Place the loaded cassette on the O-ring (Figure 5 (p. 9), part 1).
2. Put the front plate back on the housing (Figure 5 (p. 9), part 2) and turn it clockwise until it is tight. Tighten it firmly to get a good seal.
3. Leave the cap on the inlet (Figure 2 (p. 7), part 7) until you are ready to sample.



Figure 5. Installing the cassette. (1) Loaded cassette on the housing. (2) Front plate.

Fit the sorbent tube and the tube cover

Assembly order: Figure 6 (p. 10).

1. Unscrew the tube cover from the sampling head.
2. Push a new tube holder (rubber sleeve) onto the outlet of the sampling head.
3. Break both ends off the sorbent tube with a tube breaker.
4. Push the open sorbent tube into the tube holder. **The arrow printed on the tube must point away from the tube holder, towards the pump.**
5. Fit the flexible tubing to the other end of the sorbent tube.
6. Feed the free end of the tubing through the threaded end of the tube cover. Slide the cover up over the sorbent tube to the base of the sampling head.
7. Screw the cover onto the base until it is snug.

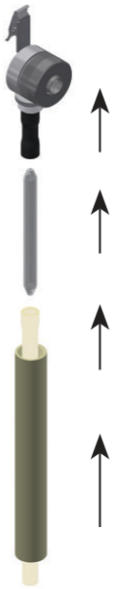


Figure 6. Sorbent tube and cover: the parts slide up onto the sampling head in the direction of the arrows.

Note
New tube holder for every sample. Fit a new tube holder before each sampling run, and discard it afterwards.

Flow rate verification

The IFV Pro samples at 1 L/min. Verify that flow through the complete sampling train with a flowmeter, using a sampling head and a sorbent tube loaded with representative media in line.

You need a flowmeter and the calibration adapter 225-361, which connects the flowmeter tubing to the inlet of the sampling head (Figure 7 (p. 11)).



Figure 7. Flow rate verification train. (1) Tubing, sorbent tube to pump. (2) Calibration adapter. (3) Sorbent tube in the tube cover. (4) Pump inlet. (5) Tubing, flowmeter to calibration adapter. (6) Sampling head. (7) Flowmeter.

Verify the flow rate

1. After charging, let the sample pump run for 5 minutes before you verify: the flow is then more stable.
2. Take the cap off the cassette inlet and put it aside.
3. Press the outlet of the calibration adapter firmly onto the inlet of the sampling head.
4. Connect the inlet of the calibration adapter to the flowmeter with flexible tubing.
5. Connect the tubing from the sorbent tube to the inlet of the sample pump.
6. Check that the flow rate is 1 L/min. See the operating instructions of your pump and flowmeter.
7. Disconnect the flowmeter and the calibration adapter. Take the representative filter cassette and sorbent tube out of the sampler.

> **Note**
> **Keep the representative media.** You will need the same filter cassette and sorbent tube to verify the flow rate again later.

Sampling

Your sampling method sets the filter, the sorbent tube and the sampling time. Check them before you start, and verify the flow rate first (Flow rate verification (p. 10)).

> **Note**
> **New tube holder for every sample.** Before each sampling run, fit a new tube holder (rubber sleeve) on the outlet of the sampling head.

Take the sample

1. Check that the representative media used for flow rate verification have been replaced with fresh, unused media — the filter and the sorbent tube your method specifies (Load the filter (p. 8), Fit the sorbent tube and the tube cover (p. 10)) — and that the cap is off the cassette inlet.
2. Connect the tubing from the sorbent tube to the inlet of the sample pump.

3. Clip the sampler to the worker's clothing in the breathing zone. Clip the pump to the worker's belt, or put it in a protective pouch (Figure 8 (p. 12)).
4. Start the pump and sample for the time your method specifies, following the operating instructions of the pump.



Figure 8. Sampling train on a worker.

End the sample

1. Stop the pump and disconnect the tubing from the pump inlet.
2. Take the tube cover and the tubing off the sorbent tube.
3. Remove the sampling media. Close both ends of the sorbent tube with the caps provided. Put the filter cassette, with the cap on its inlet, into its transport container, with the foam insert in the lid (Figure 4 (p. 9)).
4. Pull the tube holder off the sampling head and discard it.
5. Record all the sample details your method asks for.
6. Pack the samples for shipment to the laboratory as described below.

Send the samples to the laboratory

- **Filters:** put the cassette transport container into a plastic bag or another suitable container, and pack it in a padded envelope together with the sampling information and the blanks.
- **Sorbent tubes:** pack the sample tubes, the field blanks and the sampling information securely for the journey.

Field blanks

Prepare and handle a blank IFV Pro sampler exactly like the one you sample with, and send its media to the laboratory with the samples. For sorbent tubes, take the field blanks from the same lot as the sample tubes.

> **Note**
> Never draw air through a blank.

Filter and sorbent tube selection

The table gives the recommended 25 mm filter and 8 × 110 mm sorbent tube, by catalogue number, for compounds that occur as aerosol and vapour together. Order the media from Analyt-MTC.

Compound	Filter	Sorbent tube
Acrylamide	225-702	226-10-04
Alachlor	225-702	226-30-06
Aldrin	225-702	226-30-06
Azinphos-methyl	225-702	226-30-06
Butylated hydroxytoluene	225-702	226-211
Carbaryl	225-702	226-30-06
Carbofuran	225-702	226-30-06
Chlorpyrifos	225-702	226-30-06
Clopidol	225-702	226-30-06
Coumaphos	225-702	226-30-06
Cresol, all isomers	225-702	226-211
Demeton	225-702	226-30-06
Demeton S-methyl	225-702	226-30-06
Diazinon	225-702	226-30-06
Dibutyl phosphate	225-702	226-30-06
Dichlorvos	225-702	226-30-06
Dicrotophos	225-702	226-30-06
Dieldrin	225-702	226-30-06
Diesel fuel as total hydrocarbons	225-702	226-09-50_
Diethanolamine	225-702	226-214
Dioxathion	225-702	226-30-06
Disulfoton	225-702	226-30-06
Endosulfan	225-702	226-30-06
2-Ethylhexanoic acid	225-702	226-10-04
Fenamiphos	225-702	226-30-06
Fensulfothion	225-702	226-30-06
Fenthion	225-702	226-30-06
Fonofos	225-702	226-30-06
Glyoxal	Ask Analyt-MTC	226-119-7
Malathion	225-702	226-30-06
Maleic anhydride	Ask Analyt-MTC	Ask Analyt-MTC
Methomyl	225-702	226-30-06
Methyl demeton	225-702	226-30-06
Methyl parathion	225-702	226-30-06
Mevinphos	225-702	226-30-06
Monochloroacetic acid	225-702	226-10-04
Monocrotophos	225-702	226-30-06
Naled	225-702	226-30-06
o-Phthalodinitrile	225-702	226-83
Parathion	225-702	226-30-06
Pentachlorophenol	225-702	226-211
Phorate	225-702	226-30-06
Propoxur	225-702	226-30-06
Ronnel	225-702	226-30-06
Sulfotepp	225-702	226-30-06
Sulprofos	225-702	226-30-06
Temephos	225-702	226-30-06
Terbufos	225-702	226-30-06
1,1,2,2-Tetrabromoethane	225-702	226-10-04
Tetraethylpyrophosphate (TEPP)	225-702	226-106A
Thiram	225-702	226-30-06
Toluene-2,4-diisocyanate	Ask Analyt-MTC	—
Toluene-2,6-diisocyanate	Ask Analyt-MTC	—
Xylidene isomers	225-702	226-10-04

— : no sorbent tube listed; filter only.

CHAPTER 4

Maintenance

1. Take the sampling head apart (Figure 2 (p. 7)). Check that the tube holder has been removed.
2. Clean the front plate, the housing and the filter cassette in an ultrasonic cleaner with water and a wetting agent, such as a mild soap. You can also clean them with a solvent such as isopropyl alcohol. Clean the O-ring on its own, with water.
3. Wipe the parts with clean, lint-free paper or cloth, or a soft brush, and let them dry completely.

CHAPTER 5

Specifications

Technical data

Flow rate	1 L/min
50 % cut-point	100 µm at 1 L/min (inhalable fraction)
Inlet	10.6 mm diameter, designed to meet the inhalable convention[1]
MATERIALS	
Sampling head	front plate and filter cassette: stainless steel; housing and outlet: aluminium
Tube holder	rubber
Tube cover	plastic
MEDIA	
Filter	25 mm glass fibre or quartz filter, or a coated filter, depending on the compound
Sorbent tube	8 × 110 mm, depending on the compound (see Filter and sorbent tube selection (p. 13))
GENERAL	
Maximum operating temperature	392 °F (200 °C); suitable for autoclaving and solvent washing
Tubing	1/4 in inside diameter
Dimensions	8.5 × 1.2 in (21.6 × 3.17 cm)
Weight	2.4 oz (68 g)

[1] Based on the scaling-down technique described in Vincent, J.H., et al.: Development of New Personal Aerosol Samplers. Final report, NIOSH-CDC Grant No. RO1-OH 03687-03, 2003.

CHAPTER 6

Ordering information

Order from Analyt-MTC with the order codes. Filters and sorbent tubes are listed in Filter and sorbent tube selection (p. 13). Contact details: Service, warranty and contacts (p. 17) and the back cover.

Description	Order code
SAMPLER	
IFV Pro Sampler: sampling head (housing, filter cassette and front plate), protective tube cover, cassette cap, 10 spare tube holders (rubber sleeves) and cassette transport container. Requires a 25 mm filter and an 8 × 110 mm sorbent tube.	225-49
IFV Pro Sampler Kit: the sampler as above, with calibration adapter and case. Requires a 25 mm filter and an 8 × 110 mm sorbent tube.	225-49K
SPARE PARTS	
Filter cassette, stainless steel, with cap and transport container, for 25 mm filters	225-4903
Tube holders (rubber sleeves), pack of 25; change after each sample	Ask Analyt-MTC
IFV Pro cassette transport vial	Ask Analyt-MTC
ACCESSORIES	
Calibration adapter, for flow rate verification	225-361
Glass fibre filter, 25 mm	225-702

CHAPTER 7

Service, warranty and contacts

The SKC IFV Pro Sampler is made by SKC. Analyt-MTC is your contact for it: spare parts, service, technical questions and warranty matters; warranty is handled under Analyt-MTC's terms of sale.

Contact and support

ANALYT-MTC Messtechnik GmbH

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info@analyt-mtc.fr

www.analyt-mtc.com

Before you contact Analyt-MTC

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

- the catalogue number of the sampler or kit (Ordering information (p. 16));
- the compound, filter and sorbent tube;
- your sample pump and flowmeter.

Disposal

Dispose of the sampler under local regulations; separate metal, glass and plastic parts for recycling where possible.

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