ANALYT MESSTECHNIK



REFERENCE GUIDE

SKC ULTRA Passive Sampler

Which ULTRA sampler to use for 60 volatile organic compounds: sampling rate, sample time and analysis for long-term sub-ppb sampling by thermal desorption or solvent extraction.

AMTC-RF-0005

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About this guide

The SKC ULTRA Passive Sampler collects volatile organic compounds by diffusion, without a pump, down to sub-ppb levels. This guide helps you pick the right ULTRA sampler for a compound: it lists 60 compounds with the sampling rate, the sample time and the analysis that go with each sampler.

Choosing an ULTRA sampler (p. 4) explains the two analysis routes, the samplers and how to read the compound table. Compounds A–Z (p. 6) is the table itself.

How to deploy, close, store and ship the sampler is described in the operating instructions that come with every pack (Analyt-MTC document AMTC-IN-0050).

How this guide 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.

Document information

Title	SKC ULTRA Passive Sampler — Reference guide
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2	October 2026	Quality programme: new document type, number and identity pages.
1	October 2026	First issue.

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CHAPTER 1

Choosing an ULTRA sampler

The right ULTRA sampler depends on two things: how your laboratory will analyse the sample, and how long you need to sample. The compound table then gives the sampling rate the laboratory needs.

Two analysis routes

Thermal desorption (TD). The laboratory heats the sorbent and passes the released compounds straight to the gas chromatograph. TD samplers are filled with Anasorb GCB1, Chromosorb 106, Tenax TA or Carbopack X and suit sub-ppb sampling over a typical 8 to 24 hours.

Solvent extraction (SE). The laboratory extracts the sorbent with a solvent and injects the extract. The SE sampler is filled with activated charcoal and suits sub-ppb sampling over more than 8 hours, up to 30 days for some compounds.

Both routes end in gas chromatography (GC). If your laboratory offers only one of them, that decides the sampler; where both are listed for a compound, compare the sample times.

ULTRA samplers in this guide

Order code	Sorbent	Analysis	Typical sample time
690-101	Anasorb GCB1	TD, GC	8–24 h
690-103	Chromosorb 106	TD, GC	8–24 h
690-104	Tenax TA	TD, GC	8–24 h
690-105	Activated charcoal	SE, GC	more than 8 h, up to 30 days

Each pre-filled sampler also exists without the built-in blank sorbent, and there is an empty housing for user-filled samplers; both are in Ordering information (p. 10). The compound table names the pre-filled samplers.

Sampling for several days with 690-300

For a few compounds the table has a second row marked **+ 690-300**. These rows apply to the sampler used together with accessory 690-300. With the accessory fitted, the sampler takes up these compounds far more slowly, at 0.41 to 0.78 mL/min instead of 11.9 to 16.0 mL/min, so the sample time extends to as much as 7 days.

Analysis	Compounds with a 690-300 row
TD (690-101, 690-103 or 690-104)	benzene, carbon tetrachloride, ethyl benzene, tetrachloroethylene, toluene, m-, o- and p-xylene
SE (690-105)	dichloromethane, trichloroethylene

NOTICE

With the 690-300 accessory fitted, the normal sampling rate does not apply, and a result calculated with it is wrong. Use the rate of the 690-300 row whenever the accessory was fitted.

Reading the compound table

1. Find the compound. The table is alphabetical; prefixes such as n-, t-, cis-, trans-, alpha-, m-, o-, p- and position numbers (1,2-) are ignored in the sort. A compound known by several names is listed once, with the other names under it; each other name has a short "see" line at its own place.
2. Choose the analysis route: **TD** or **SE**. Where a compound has no row for one route, this guide gives no sampler for it.
3. Check that the sample time of the row covers your sampling period.
4. Order the catalogue number in the last column. Where it reads "690-101 or 690-103", any of the samplers listed can be used.
5. Note the sampling rate. Give it to the laboratory together with the start and stop times of the sample.

> **Note**
> The rates in this guide are the supplier's published values. Sampling rates measured at low air velocities, typical of indoor and outdoor environmental sampling, are given in Analyt-MTC technical note AMTC-TN-0008. For compounds that are not listed, ask Analyt-MTC.

CHAPTER 2

Compounds A–Z

Sampling rate, sample time, analysis and ULTRA sampler for each compound. TD = thermal desorption, SE = solvent extraction; both are followed by gas chromatography. Rows marked + 690-300 apply only with that accessory fitted (see Sampling for several days with 690-300 (p. 4)).

Compound	Analysis	Rate, mL/min	Sample time	Order code
Acetone	SE	15.2	8–24 h	690-105
Acrylonitrile	SE	20.4	8–24 h	690-105
t-Amyl methyl ether methyl tert-amyl ether	TD	13.1	8–24 h	690-101 or 690-103
	SE	13.1	8–24 h	690-105
Benzene	TD	16.0	8–24 h	690-101 or 690-103
	TD	0.78	24 h–7 days	690-101 or 690-103 + 690-300
	SE	16.0	8 h–30 days	690-105
1-Bromopropane	TD	14.4	8–24 h	690-101 or 690-103
	SE	14.4	8–24 h	690-105
2-Butanone methyl ethyl ketone, MEK	TD	16.9	8–24 h	690-101 or 690-103
	SE	16.9	8–24 h	690-105
n-Butyl acetate	TD	12.3	8–24 h	690-101, 690-103 or 690-104
	SE	12.3	8–24 h	690-105
Butyl acrylate	TD	11.7	8–24 h	690-101 or 690-103
	SE	11.7	8–24 h	690-105
t-Butyl ethyl ether ethyl tert-butyl ether	TD	13.1	8–24 h	690-101, 690-103 or 690-104
	SE	13.1	8–24 h	690-105
t-Butyl methyl ether methyl t-butyl ether, MTBE	SE	13.6	8 h–30 days	690-105
p-tert-Butyltoluene	TD	10.4	8–24 h	690-101 or 690-103
	SE	10.4	8–24 h	690-105
Carbon tetrachloride	TD	0.59	8–24 h	690-101 or 690-103 + 690-300
	SE	14.1	8 h–7 days	690-105
Chlorobenzene	TD	14.4	8–24 h	690-101 or 690-104
	SE	14.4	8–24 h	690-105
Chloroform	SE	13.0	8 h–7 days	690-105
Cumene isopropyl benzene	TD	12.8	8–24 h	690-101 or 690-104
	SE	12.8	8–24 h	690-105
Cyclohexane	TD	15.6	8–24 h	690-101 or 690-103
	SE	15.6	8–24 h	690-105
Cyclohexanone	TD	15.6	8–24 h	690-101, 690-103 or 690-104
	SE	15.6	8–24 h	690-105
n-Decane	TD	12.2	8–24 h	690-101 or 690-104
	SE	12.2	8–24 h	690-105

Compound	Analysis	Rate, mL/min	Sample time	Order code
1,2-Dichlorobenzene	TD	12.5	8–24 h	690-101, 690-103 or 690-104
	SE	12.5	8–24 h	690-105
1,2-Dichloroethane ethylene dichloride	TD	14.2	8–24 h	690-101 or 690-103
	SE	14.2	1–14 days	690-105
Dichloromethane methylene chloride	SE	14.7	8 h–3 days	690-105
	SE	0.54	1–7 days	690-105 + 690-300
1,2-Dichloropropane propylene dichloride	TD	14.3	8–24 h	690-101 or 690-103
	SE	14.3	8–24 h	690-105
cis-1,3-Dichloropropene	TD	13.6	8–24 h	690-101 or 690-103
	SE	13.6	8–24 h	690-105
trans-1,3-Dichloropropene	TD	14.4	8–24 h	690-101 or 690-103
	SE	14.4	8–24 h	690-105
Diisobutyl ketone	TD	10.3	8–24 h	690-101 or 690-103
	SE	10.3	8–24 h	690-105
Ethanol ethyl alcohol	SE	20.3	8–24 h	690-105
Ethyl acetate	TD	13.1	8–24 h	690-101 or 690-103
	SE	13.1	8–24 h	690-105
Ethyl acrylate	TD	13.7	8–24 h	690-101 or 690-103
	SE	13.7	8–24 h	690-105
Ethyl alcohol: see Ethanol				
Ethyl benzene	TD	12.9	8–24 h	690-101, 690-103 or 690-104
	TD	0.41	24 h–7 days	690-101, 690-103 or 690-104 + 690-300
	SE	12.9	8 h–30 days	690-105
Ethyl methacrylate	TD	13.1	8–24 h	690-101 or 690-103
	SE	13.1	8–24 h	690-105
Ethyl tert-butyl ether: see t-Butyl ethyl ether				
Ethylene dichloride: see 1,2-Dichloroethane				
n-Heptane	TD	13.9	8–24 h	690-101 or 690-103
	SE	13.9	8–24 h	690-105
n-Hexane	TD	14.3	8–24 h	690-101 or 690-103
	SE	14.3	8–24 h	690-105
2-Hexanone methyl butyl ketone, MBK	TD	14.3	8–24 h	690-101 or 690-103
	SE	14.3	8–24 h	690-105
Hexone: see Methyl isobutyl ketone				
Isophorone 3,5,5-trimethylcyclohex-2-enone	TD	11.3	8–24 h	690-101 or 690-104
Isopropanol isopropyl alcohol	TD	18.42	8–24 h	690-101 or 690-103
	SE	18.4	8–24 h	690-105
Isopropyl alcohol: see Isopropanol				
Isopropyl benzene: see Cumene				
Limonene	TD	11.1	8 h	690-103
MBK: see 2-Hexanone				

Compound	Analysis	Rate, mL/min	Sample time	Order code
MEK: see 2-Butanone				
Methyl acrylate	TD	15.7	8–24 h	690-101 or 690-103
	SE	15.7	8–24 h	690-105
Methyl butyl ketone: see 2-Hexanone				
Methyl chloroform: see 1,1,1-Trichloroethane				
Methyl cyclohexane	TD	14.2	8–24 h	690-101 or 690-103
	SE	14.2	8–24 h	690-105
Methyl ethyl ketone: see 2-Butanone				
Methyl isobutyl ketone MIBK, hexone	TD	13.5	8–24 h	690-101 or 690-103
	SE	13.5	8–24 h	690-105
Methyl methacrylate MMA	TD	13.1	8–24 h	690-101 or 690-103
	SE	13.1	8–24 h	690-105
alpha-Methyl styrene	TD	12.6	8–24 h	690-101 or 690-104
	SE	12.6	8–24 h	690-105
Methyl styrene vinyl toluene	TD	12.3	8–24 h	690-101 or 690-104
Methyl t-butyl ether: see t-Butyl methyl ether				
Methyl tert-amyl ether: see t-Amyl methyl ether				
Methylene chloride: see Dichloromethane				
MIBK: see Methyl isobutyl ketone				
Monochlorotoluene 1-chloro-2-methyl benzene; OXSOL 10	TD	13.0	8–24 h	690-101, 690-103 or 690-104
	SE	13.0	8–24 h	690-105
MTBE: see t-Butyl methyl ether				
Nonane	TD	10.6	8–24 h	690-101 or 690-104
	SE	10.6	8–24 h	690-105
n-Octane	TD	12.7	8–24 h	690-101 or 690-104
	SE	12.7	8–24 h	690-105
n-Pentane	SE	14.9	8–24 h	690-105
Perchloroethylene: see Tetrachloroethylene				
alpha-Pinene	TD	11.3	8–24 h	690-101 or 690-104
	SE	11.3	8–24 h	690-105
Propylene dichloride: see 1,2-Dichloropropane				
Styrene	TD	13.7	8–24 h	690-101, 690-103 or 690-104
	SE	13.7	8–24 h	690-105
1,1,2,2-Tetrachloroethane	TD	11.8	8–24 h	690-101, 690-103 or 690-104
	SE	11.8	8–24 h	690-105
Tetrachloroethylene perchloroethylene	TD	13.1	8–24 h	690-101, 690-103 or 690-104
	TD	0.55	24 h–7 days	690-101, 690-103 or 690-104 + 690-300
	SE	13.1	1–14 days	690-105
Tetrahydrofuran	TD	17.7	8–24 h	690-101 or 690-103
	SE	17.7	8–24 h	690-105

Compound	Analysis	Rate, mL/min	Sample time	Order code
Toluene	TD	14.5	8–24 h	690-101, 690-103 or 690-104
	TD	0.63	24 h–7 days	690-101, 690-103 or 690-104 + 690-300
	SE	14.5	8 h–30 days	690-105
1,1,1-Trichloroethane methyl chloroform	SE	14.1	8–24 h	690-105
1,1,2-Trichloroethane	TD	12.5	8–24 h	690-101
Trichloroethylene	TD	14.9	8–24 h	690-101 or 690-103
	SE	14.9	1–14 days	690-105
	SE	0.596	24 h–7 days	690-105 + 690-300
1,2,3-Trichloropropane	TD	11.9	8–24 h	690-101, 690-103 or 690-104
	SE	11.9	8–24 h	690-105
1,2,4-Trimethylbenzene	SE	13.0	8–24 h	690-105
3,5,5-Trimethylcyclohex-2-enone: see Isophorone				
Vinyl toluene: see Methyl styrene				
m-Xylene	TD	12.5	8–24 h	690-101, 690-103 or 690-104
	TD	0.61	24 h–7 days	690-101, 690-103 or 690-104 + 690-300
	SE	12.5	8 h–30 days	690-105
o-Xylene	TD	11.9	8–24 h	690-101, 690-103 or 690-104
	TD	0.61	24 h–7 days	690-101, 690-103 or 690-104 + 690-300
	SE	11.9	8 h–30 days	690-105
p-Xylene	TD	12.8	8–24 h	690-101, 690-103 or 690-104
	TD	0.61	24 h–7 days	690-101, 690-103 or 690-104 + 690-300
	SE	12.8	8 h–30 days	690-105

CHAPTER 3

Ordering information

Order from Analyt-MTC with the order codes.

Description	Order code
ULTRA passive sampler, Anasorb GCB1, for thermal desorption	690-101
ULTRA passive sampler, Chromosorb 106, for thermal desorption	690-103
ULTRA passive sampler, Tenax TA, for thermal desorption	690-104
ULTRA passive sampler, activated charcoal, for solvent extraction	690-105
Pre-filled sampler without the built-in blank sorbent (suffix -NB)	ask Analyt-MTC
Empty housing, for user-filled samplers	690-200
Sorbent vials for the empty housing	690-204 690-205
Accessory for sampling over several days	690-300

CHAPTER 4

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

Analyt-MTC can help with

- compounds that are not in this guide;
- choosing between thermal desorption and solvent extraction for your laboratory;
- sampling rates for the Carbopack X sampler;
- ordering samplers, sorbent vials and accessories.

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

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