SKC Thermal Desorption Sorbent Tubes

Single- and multi-bed tubes for active sampling of ppb-level VOCs in ambient or indoor air



Thermal desorption needs no extraction solvent, so the collected sample is not diluted and analytical sensitivity is much higher. In most cases recovery is so close to 100 % that no desorption efficiency correction is needed. The tubes fit Perkin Elmer and Markes International thermal desorbers and meet EPA Method TO-17.

1/4 × 3 1/2 in	Steel or glass	EPA TO-17	Close to 100 %
Tube size, OD × length	Tube material	Method	Analytical recovery

Performance

Use	Active sampling of ppb-level volatile organic compounds (VOCs) in ambient or indoor air
Methods	EPA TO-17, TO-1, TO-2, IP-1B; ASTM D6196-15e1; MDHS 104; NIOSH 2549
Recovery	Close to 100 % in most cases; no desorption efficiency correction needed
Sensitivity	High; the sample is not diluted by an extraction solvent
Sorbent requirements	Low contaminant background, high thermal stability, retains the analytes and releases them quickly when heated

Mechanical

Desorber tubes	Glass or stainless steel, 1/4-inch OD × 3 1/2-inch length (6.35 mm OD × 88.9 mm length)
Screening tubes	Glass, 0.24-inch OD × 4.5-inch length (6 mm OD × 115 mm length), for the Dynatherm thermal desorber
Beds	Single and multiple sorbent beds
Conditioned tubes	Ready for immediate use, sealed with PTFE end caps
Unconditioned tubes	Plastic capped, supplied with PTFE end caps for use after conditioning by the laboratory
Identification	Permanent serial number on each tube
Reuse	Reusable; best practice is to condition the tube before each use, for background levels suited to ppb-level measurements

Sorbents

Anasorb 747	Beaded active carbon, 20/40 mesh, 980 m²/g; capacity for organic vapours like petroleum-based and coconut-shell charcoals; non-polar organic compounds
Anasorb GCB1 [1]	Graphitised carbon, 20/40 or 60/80 mesh, 100 m²/g; equivalent to Carbopack B; compounds of intermediate to high volatility
Anasorb GCB2	20/40 or 60/80 mesh, 10 m²/g; equivalent to Carbopack C; semi-volatile organic compounds (SVOCs)
Carbopack X	Strong graphitised carbon, 40/60 mesh, 240 m²/g; hydrophobic; C3–C9 hydrocarbons
Carbosieve S-III	Carbon molecular sieve, 60/80 mesh, 975 m²/g; moderately hydrophilic; small molecules, halogenated hydrocarbons, alcohols; replaces Anasorb CMS
Chromosorb 106 [2]	Porous polymer, 60/80 mesh, 700–800 m²/g; hydrophobic; low-boiling hydrocarbons, benzene, labile and volatile oxygenated compounds
Tenax TA	Porous polymer, 35/60 or 60/80 mesh, 30–35 m²/g; hydrophobic, low background; medium- to high-boiling compounds; EPA TO-17, IP-1B
Tenax GR	Tenax/graphite composite, 60/80 mesh, 35 m²/g; extends Tenax to lower boiling compounds

Tubes by method and sorbent

Method	Sorbent	Steel, conditioned, order code	Steel, unconditioned, order code	Glass, conditioned, order code	Glass, unconditioned, order code
ASTM D6196-15e1	Anasorb GCB1	226-356	226-356-UP	—	—
ASTM D6196-15e1, MDHS 104	Tenax TA	226-357	226-357-UP	226-360	226-360-UP
ASTM D6196-15e1, MDHS 104	Chromosorb 106	226-358	226-358-UP	—	—
EPA TO-1, IP-1B	Tenax TA	226-340	226-340-UP	226-339	226-339-UP
EPA TO-2	Carbosieve S-III	226-341	226-341-UP	—	—
EPA TO-17	Anasorb GCB1/Carbosieve S-III	226-349	226-349-UP	—	—
EPA TO-17, NIOSH 2549	Anasorb GCB2/Anasorb GCB1/Carbosieve S-III	Ask Analyt-MTC	226-350-UP	226-347	226-347-UP
EPA TO-17	Tenax GR/Anasorb GCB1	226-348	Ask Analyt-MTC	—	—
EPA TO-17	Anasorb GCB2/Carbosieve S-III	—	—	226-346	226-346-UP
EPA TO-17	Tenax GR/Anasorb GCB2	—	—	226-345	226-345-UP
MDHS 104	Carbopack X	Ask Analyt-MTC	226-363-UP	—	—
EPA IP-1B, NIOSH 2549	Screening tube: Anasorb GCB2/GCB1/Carbosieve S-III	—	—	226-330	226-330-UP

Order from Analyt-MTC with the order codes. Each code is a single tube. MDHS 104 applies to the stainless steel tubes only.

Accessories

Glass transport tubes, for 3.5-inch (88.9 mm) tubes, 5 per pack	226-300
Swagelok fittings, for 1/4-inch (6.35 mm) OD tubes, 2 per pack	P50291
PTFE ferrules, 2 per pack	P30121

Notes

1. Anasorb GCB1 is equivalent to Carbopack B; Anasorb GCB2 is equivalent to Carbopack C.
2. Chromosorb 106 is the least polar polymer of the Chromosorb family and works like Anasorb 727.

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