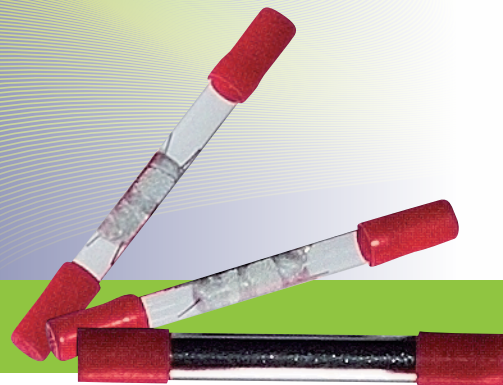


Thermal Desorption Sorbent Tubes

For Sub-ppb VOC Measurements



Thermal Desorption

SKC sorbent technology research has produced superior materials for the collection of organic compounds for thermal desorption.

Thermal desorption techniques offer the advantage of greatly improved analytical sensitivity. Because a solvent is not used, the collected sample is not diluted and, in most cases, analytical recovery is so close to 100% that desorption efficiency corrections are not required.

Sorbents

To be suitable for thermal desorption, sorbents must meet exacting specifications that include:

- Low contaminant background
- High thermal stability
- Sufficient adsorptive strength to retain components of interest, but release them quickly when heat is applied

Recent developments in sorbent technology have provided some superior materials for the collection of organic compounds for thermal desorption.

Anasorb® 747 (20/40 mesh size and 980 m²/gm surface area)

This beaded active carbon has the capacity for organic vapors similar to petroleum-based and coconut-shell charcoals. It also can be used to sample nonpolar organic compounds.

Anasorb GCB1 (20/40 mesh size and 100 m²/gm surface area)

Anasorb Graphitized Carbon Black 1 (GCB1) has a moderate surface area and is equivalent to Carbopack B (60/80). This sorbent has proven to be valuable for sampling compounds of intermediate to high volatility.

Anasorb GCB2 (20/40 mesh size and 10 m²/gm surface area)

This sorbent has a low surface area and is equivalent to Carbopack C (60/80). Anasorb GCB2 is useful in collecting semi-volatile organic compounds (SVOCs).

Carbopack X (40/60 mesh size and 240 m²/gm surface area)

This strong graphitized carbon sorbent collects C3 to C9 hydrocarbons. Carbopack X is hydrophobic.

- High sensitivity
- High recovery
- Reusable

Carbosieve S-III (60/80 mesh size and 975 m²/gm surface area)

This carbon-based molecular sieve has properties similar to the obsolete Anasorb CMS and replaces it in SKC thermal desorption tubes. Carbosieve S-III has a high capacity/breakthrough volume for small molecules and is moderately hydrophilic. It can be used for the lower boiling compounds such as halogenated hydrocarbons and alcohols.

Chromosorb® 106 (60/80 mesh size and 700 to 800 m²/gm surface area)

A porous polymer sorbent, Chromosorb 106 is used to trap low-boiling hydrocarbons, benzene, labile compounds, and volatile oxygenated compounds. This hydrophobic sorbent is the least polar polymer in the Chromosorb family and is functionally similar to Anasorb 727.

Tenax® TA (20/35 or 35/60 mesh size and 30 to 35 m²/gm surface area)

Tenax TA is a traditional sorbent (porous polymer) for trapping medium to high boiling compounds; it is especially useful for low concentrations because of its low background. Tenax TA is hydrophobic and is suitable for use in EPA Method TO-17 or IP-1B and other thermal desorption applications.

Tenax GR (20/35 mesh size and 35 m²/gm surface area)

This Tenax/graphite composite extends the range of Tenax to lower boiling compounds. It retains the ability of Tenax to be cleaned easily to a very low background and is widely used in thermal desorption applications.

Thermal Desorption Sorbent Tubes

For Sub-ppb VOC Measurements

Thermal Desorption Tube Selection for Perkin Elmer or Markes International Thermal Desorber Tubes

SKC offers single and multiple-bed thermal desorption tubes that meet EPA Method TO-17 requirements. All SKC thermal desorption tubes are sealed with PTFE end caps and marked with a permanent serial number. SKC offers **thermally conditioned** tubes for immediate use or **unconditioned** tubes for thermal conditioning by your laboratory as needed. It is best practice to condition thermal desorption tubes before each use to ensure background levels are suitable for ppb-level measurements.

Perkin Elmer or Markes International Thermal Desorber Tubes

Available in **glass**, or **stainless steel**, these tubes measure 1/4-inch OD x 3 1/2-inch length (6.35-mm OD x 88.9-mm length). Supplied as a single tube.

Method	Sorbent	SS	SS	Glass	Glass
		Conditioned Cat. No.	Unconditioned Cat. No.	Conditioned Cat. No.	Unconditioned Cat. No.
ASTM D6196	Anasorb GCB1*	226-356	226-356-UP	—	—
ASTM D6196 MDHS 72	Tenax TA	226-357	226-357-UP	226-360	226-360-UP
ASTM D6196 MDHS 72	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	226-350	226-350-UP	226-347	226-347-UP
EPA TO-17	Tenax GR/Anasorb GCB1*	226-348	226-348-UP	—	—
For very volatile compounds	Carbopack X	226-363	226-363-UP	—	—
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

Screening Tubes (Dynatherm Thermal Desorber)

Available in **glass**, these tubes measure 0.24-inch OD x 4.5-inch length (6-mm OD x 115-mm length). Supplied as a single tube.

Method	Sorbent		Cat. No.	Qty.
EPA IP 1B, NIOSH 2549	GCB2*/GCB1*/Carbosieve S-111	Conditioned	226-330	ea
		Unconditioned	226-330-UP	ea

* Anasorb GCB1 is equivalent to Carbopack B; Anasorb GCB2 is equivalent to Carbopack C.

Accessories	Cat. No.
Glass Transport Tubes, for 3.5-inch (88.9-mm) length tubes, pk/5	226-300
Swagelok Fittings, for 1/4-inch (6.35-mm) OD tubes, set of 2	P50291
PTFE Ferrules, set of 2	P30121