

# ULTRA Passive Samplers

Convenient alternative to canisters and thermal desorption (TD) tubes

- **Results comparable to canisters for EPA Method TO-15** (see data on page 3)
  - No cleaning and certification costs
  - Lower purchase price
  - No expensive shipping
- **Choice of 5 sorbents for environmental air sampling, including semi-volatile organic compounds**
  - Anasorb GCB1
  - Tenax TA
  - Chromosorb 106
  - Charcoal (solvent desorption)
  - Carbo-pack X
- **Sub-ppb level detection, highly sensitive thermal desorption**
  - Rates 15 times higher than tube-style passive monitors for lower detection limits
- **Passive alternative to EPA TO-17 — no pump required**
- **Slide cover for easy on/off sampling**
- **Validated sampling (uptake) rates**
  - See [www.skcinc.com/catalog/passive-guide.php](http://www.skcinc.com/catalog/passive-guide.php)
- **Built-in blank/correction sorbent section available**
- **Sample integrity**
  - Sonically welded housing seals the sampler
  - Manufactured in an ultra-clean environment
  - Extensive cleaning and QC procedures
- **Higher uptake rate than passive TD tubes** (see data on page 3)

**User-filled option  
extends shelf-life!**



The patented\* ULTRA® samples by diffusion and provides low parts per billion (ppb) to parts per trillion (ppt) detection of compounds, including semi-volatile organic compounds (SVOCs). ULTRA Passive Samplers are an economical alternative to stainless steel canisters for EPA TO-15 sampling and show excellent sampling correlation in side-by-side studies with canisters (see page 3). ULTRA Passive Samplers have a higher uptake rate than passive TD tubes (see page 3). Operation is as easy as sliding the cover open to start sampling and closing it to stop sampling. ULTRA is available prefilled with sorbent. User-filled ULTRA Passive Samplers<sup>‡</sup> are available for extended shelf-life.

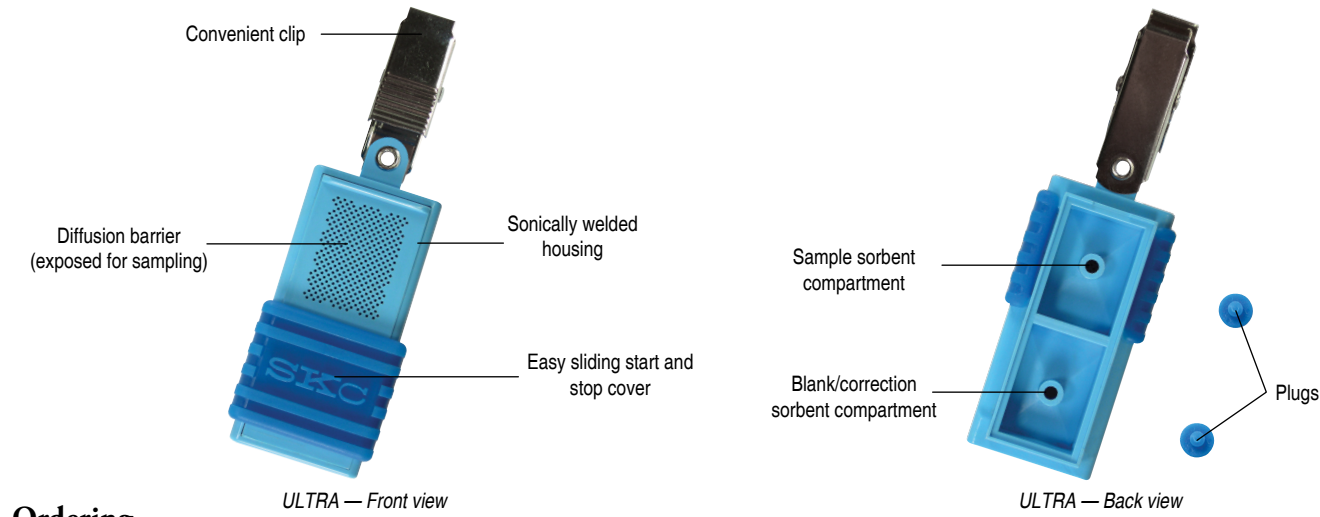
\* U.S. Patent No. 6,607,581

‡ For user-filled ULTRA samplers, see [www.skcinc.com/ultra](http://www.skcinc.com/ultra)

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# ULTRA Passive Samplers



## Ordering

| ULTRA Passive Samplers prefilled with thermally purged sorbent, pk/5: | Cat. No. | Cat. No.   |
|---|----------|------------|
| Anasorb GCB1,** 370 mg in each compartment or vial                    | 690-101  | 690-101-NB |
| Chromosorb 106,** 285 mg in each compartment or vial                  | 690-103  | 690-103-NB |
| Tenax TA,† 253 mg in each compartment or vial                         | 690-104  | 690-104-NB |
| Charcoal,** 500 mg in each compartment or vial (solvent desorption)   | 690-105  | 690-105-NB |
| Carbopack X,† 400 mg in each compartment or vial                      | 690-106  | 690-106-NB |

# 30-day shelf-life at < 39.2 F (4 C) ‡ Comparable to Carbopack B \*\* Six-month shelf-life at < 39.2 F (4 C) † Go to [www.osha.gov](http://www.osha.gov) and search "ULTRA Passive" for additional sampling rates for Chromosorb 106.

| ULTRA user-filled with thermally purged sorbent:<br>User fills sampler with sorbent supplied in vials for extended shelf-life  | Cat. No. |
|--|----------|
| <b>ULTRA Sampler</b> , empty sampler housing only, packaged in reusable pouch<br>Requires sorbent vials listed below; select sorbent appropriate for the application | 690-200  |
| <b>Sorbent Vials, pk/2</b><br>Contain purged sorbent (< 25 ng typical background level per vial)   |          |
| Anasorb GCB1 in vial,† 370 mg in each vial   | 690-201  |
| Chromosorb 106 in vial,† 285 mg in each vial   | 690-203  |
| Tenax TA in vial,† 253 mg in each vial   | 690-204  |
| Charcoal in vial,† 500 mg in each vial, for solvent desorption   | 690-205  |
| Carbopack X in vial,† 400 mg in each vial  | 690-206  |

† 60-day shelf-life at < 39.2 F (4 C) ‡ One-year shelf-life at < 39.2 F (4 C) † Contact SKC for additional information on sampling rates for Chromosorb 106.

| Sampling Accessories  | Cat. No. |
|---|----------|
| <b>Rate Reducer</b> , 12 holes, lowers sampling rate for extended sampling time and higher concentrations | 690-300  |
| <b>Transfer Funnel</b> , for filling sampler housing with sorbent from vials, for ULTRA only              | 690-301  |
| <b>Stand for Indoor Sampling</b>  | 690-302  |
| <b>Shelter for Outdoor Sampling</b>   | 690-303  |

| Analysis Accessory  | Cat. No. |
|---|----------|
| <b>Thermal Desorption Tube</b> , Perkin Elmer, 0.25 x 3.5 inches (OD x L), includes screens and end caps            | P226530  |
| <b>Analysis Transfer Funnel</b> , facilitates transfer of sorbent from vial to 0.25-inch OD thermal desorption tube | 590-264  |

# ULTRA Passive Samplers

## Compare ULTRA Passive Sampler and Canisters

Side-by-side studies using ULTRA Passive Samplers (Anasorb GCB1) and stainless steel canisters demonstrate excellent sampling correlation.

| Compound | ULTRA (µg/m³) | Canister (µg/m³) | Compound          | ULTRA (µg/m³) | Canister (µg/m³) |
|----------|---------------|------------------|-------------------|---------------|------------------|
| Benzene  | 4.2           | 4.5              | Perchloroethylene | 1.1           | 1.6              |
|          | 2.1           | 2.0              |                   | 2.3           | 2.2              |
|          | 1.9           | 1.6              |                   | 32.9          | 30.0             |
|          | 6.67          | 6.8              |                   | 1.37          | 2.0              |
|          | 1.58          | 1.5              |                   | 2.85          | 2.6              |
| Toluene  | 30.0          | 26.0             |                   | 20.3          | 19.0             |
|          | 44.0          | 46.0             |                   | 10.8          | 8.8              |
|          | 6.1           | 3.8              |                   |               |                  |
|          |               |                  |                   |               |                  |
|          |               |                  |                   |               |                  |

| Compound   | ULTRA (µg/m³) | Canister (µg/m³) |
|------------|---------------|------------------|
| m,p-Xylene | 21.2          | 19.2             |
|            | 5.52          | 5.6              |
|            | 34.1          | 36.7             |
|            | 3.7           | 2.51             |
|            | 5.7           | 5.1              |

| Compound | ULTRA (µg/m³) | Canister (µg/m³) |
|----------|---------------|------------------|
| o-Xylene | 7.55          | 7.9              |
|          | 1.16          | 0.93             |
|          | 1.96          | 1.9              |
|          | 8.3           | 6.2              |
|          | 13.3          | 11.0             |

## Sampling Rates and Minimum Reporting Levels for Long-term Sampling

### Sampling Rates and MRLs<sup>Δ</sup> for ULTRA with Charcoal (Solvent Desorption)

| Compound                | Sampling Rate (ml/min) |         | Sampling Period/Upper Limit (days) | Maximum Recommended Concentration (ppb) | Indoor <sup>§</sup> MRL <sup>Δ</sup> (µg/m³) |        | Outdoor <sup>§</sup> MRL <sup>Δ</sup> (µg/m³) |        |
|-------------------------|------------------------|---------|------------------------------------|---|--|--------|---|--------|
|                         | Indoor                 | Outdoor |                                    |   | 7 Day  | 30 Day | 7 Day   | 30 Day |
| Benzene                 | 10.70                  | 16.0    | 30                                 | 113                                     | 3.98   | 0.43   | 1.24  | 0.29   |
| Ethyl benzene           | 9.02                   | 12.9    | 30                                 | 85                                      | 1.10   | 0.26   | 0.77  | 0.18   |
| Toluene                 | 8.90                   | 14.5    | 30                                 | 500                                     | 1.12   | 0.26   | 0.69  | 0.16   |
| Methyl tert-butyl ether | 9.84                   | 13.6    | 30                                 | 60                                      | 2.0  | 0.456  | 1.45  | 0.34   |
| o-Xylene                | 8.11                   | 11.9    | 30                                 | 80                                      | 1.22   | 0.29   | 0.83  | 0.195  |

Δ MRL — minimum reporting level: These can vary with each laboratory; check with the laboratory.

§ Indoor — low velocity conditions (< 5 cm/sec), outdoor — 5 to 200 cm/sec, low air velocities, typically found in indoor air, result in lower uptake rates in passive samplers

## Compare ULTRA Samplers to Passive TD Tubes

| Sampler                   | ULTRA Passive Sampler                         | Passive TD Tubes  |
|---------------------------|---|---|
| Sampling Rate for Benzene | 16.0 ml/min                                   | 0.67 ml/min   |
| Sampling Time             | 8 to 24 hours                                 | 14 days   |
| Desorption                | Transfer to TD tube                           | Direct insertion into thermal desorber  |
| Recommended Applications  | Environmental air monitoring, vapor intrusion | Compliance fence-line monitoring of petroleum refineries according to EPA 325 |

Learn more at [www.skinc.com](http://www.skinc.com)!