

Technical Data Sheet: TDS 8

VOLATILE ORGANIC COMPOUNDS

This tube is designed for passive (time weighted average concentrations) and active monitoring of volatile and semi-volatile organic compounds in the range C2 – C28. The tube can be used passively for time weighted average concentrations or pumped (active) for workplace monitoring and comparison to health and safety workplace exposure limits.



Description: Stainless steel tube filled with a solid polymer absorbent, two brass swagelok caps. An appropriate sorbent is selected to suit the application required.

For passive sampling an aluminum air diffuser is supplied which is fitted to the sampling end of the tube (groove end) during exposure.

For active sampling, an air pump set to approx. 50 ml/min is connected to the non-sampling end of the tube and run for a preset period.

Concentrations absorbed by the tube are measured by thermal desorption and analysis by Gas Chromatography / FID or Mass Spectroscopy. (Analysis carried out in accredited laboratories, in accordance with ISO 17025).

Suitable for carrying out spatial or localized assessments of volatile and semi-volatile organics in ambient air, soil, workplace, or industrial monitoring. Used for tracking VOC / SVOC in soil using soil probe (please see TDS 11).

Tube Dimensions: 6.3mm OD x 5.0mm ID x 90mm length.

Recommended Exposure Periods:

Passive Sampling: 1-4 weeks.

Active Sampling: the safe sampling volumes for each type of compound to be monitored should be considered (published figures).

Uptake Rates: Determined by calibration in a standard atmosphere or quoted from published data.

Air Velocity: Tube fitted with filter therefore negligible influence.

Storage: Store in a dark, cool environment free from residual airborne VOC.

Shelf Life: 12 weeks from conditioning date (dependant on type of solid sorbent used).

Analytical Expanded Measurement Uncertainty: Available upon request.

Limit of Detection: Available upon request.



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Relevant Standards: ISO16017: EPA T0-17

Applications:

- Ambient air monitoring of traffic systems, factory outputs ie. paint shops and petrochemical boundaries.
- Stack monitoring.
- Workplace monitoring: Measuring levels of airborne solvent vapors.
- Personal monitoring.
- Soil monitoring.
- Measurement of occupational exposure levels.
- Biological monitoring i.e. non-invasive measuring of levels of VOCs taken into the body by skin adsorption, ingestion and inhalation. This method provides vital information on the potentially harmful build-up of chemicals in the body after prolonged low-level exposure.

Packaging of Sorbents: Each type of sorbent is packed into the thermal desorption tube under strict quality control and under laboratory environment conditions. The weight of the sorbent packed is controlled to within +/- 5%.

Selection of Absorbents: The choice of absorbent depends on the volatility of the analyte concerned. Sorbents or series of sorbents selected must quantitatively retain the compounds from the volume of air/gas sampled and then be released as efficiently as possible when the tube is desorbed. A general rule is to use the boiling point of the component as a guide to its volatility. Ormantine USA Ltd. can advise users on the correct sorbent to be used.

The more volatile the analyte, the stronger the sorbent must be.

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