

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 C3 – C32. 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.

For passive sampling an aluminium 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.

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

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

An appropriate sorbent is selected to suit the application required (RefPage 2)

Concentrations absorbed by the tube are measured by thermal desorption and analysis by gas chromatography / FID or Mass Spectroscopy (U.K.A.S. Accredited Methods)

Recommended Exposure Periods for Passive Sampling : 1 –4 weeks

For 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

Desorption Efficiency : $d = 0.99$ (determined using N.I.S.T. Standard Analytes)

Analytical Expanded Measurement Uncertainty : +/- 14.8%

Limit of Detection (Analysis) : 0.2 ppb



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Relevant Standards : ISO16017 : EN14662 : EN13528: MDHS 72 : MDHS 80: EPA T0-17

Applications:

- Ambient Air Monitoring of Traffic Systems, Factory Outputs ie. Paint Shops, Petrochemical Boundaries.
- Stack monitoring
- Workplace monitoring: Measuring levels of airborne solvent vapours
- Personal Monitoring
- Soil Monitoring
- Measurement of Occupational Exposure Levels
- Biological Monitoring i.e. Non-invasive measuring of levels of VOC,s 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. Gradko International Ltd Technical Services can advise users on the correct sorbent to be used

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