

Technical Data Sheet: TDS 8

VOLATILE ORGANIC COMPOUNDS

These tubes are designed for passive (time weighted average concentrations) and active monitoring of volatile and semi-volatile organic compounds in the range C2 – C28. The tubes 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 swage lock caps. An appropriate sorbent is selected to suit the application required – several tubes may be required to measure all compounds 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 50 ml/min (other flow rates available on request) 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 GC/FID or GC/MS (UKAS Accredited Methods).

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).

Benefits of passive monitoring:

- No power supply required
- Can be used over a wide area
- Long-term monitoring

Benefits of active sampling:

- Faster sample collection so results are received sooner
- Controlled sample volume
- Long - term monitoring
- Effective sampling of low concentrations – ppb levels
- Very volatile compounds are retained
- Low cost pump rental from Ormantine

A-740-009A

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).

Concentration in Air of Chemical	Recommended Pumping Time
High (you can smell it)	5 minutes
Suspected High Level	5 - 10 minutes
No Idea	50 minutes
Low	60 - 100 minutes
Expected Clean Air	100 minutes +

It is very important that moisture does not enter the tube – if the environment is humid, please contact us for advice.

Air Velocity: Tube fitted with filter therefore negligible influence.

Storage: Store in a dark, cool environment free from residual airborne VOC. After sampling, tubes can be wrapped in tin foil if required – do not use any other form of wrapping.

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

Analytical Expanded Measurement Uncertainty: Available upon request.

Limit of Detection: Specific values available upon request.

Toluene is used as the non-specific standard for most semi-quantitative analysis – general limits of detection are given as a guide below:

Tube type	Limit of detection (4 weeks exposure)		
	Toluene	Benzene	1,3 butadiene
Chromosorb 106	<0.1 ug ^m ⁻³	<0.02 ppb	
Tenax/Unicarb Silcosteel	<0.06 ug ^m ⁻³	<0.02 ppb	
Tenax	<0.2 ug ^m ⁻³	<0.05 ppb	
BTEX tube	<0.1 ug ^m ⁻³	<0.03 ppb	
Benzene tube		<0.2 ug ^m ⁻³ <0.05 ppb	
Carbopack X tube			<0.1 ug ^m ⁻³ <0.05 ppb

For passive samples results are reported in ppb, for pumped samples results are reported in ug^m⁻³ unless otherwise requested.

A-740-009A