

Technical Data Sheet: TDS 17

DIFRAM-VOC: RAPID AIR MONITOR - VOCs



Description: A plastic (H.D.P.E.) circular diffusive sampler containing a sorbent for measuring gaseous volatile organic compounds in ambient air. This sampler is designed to provide a considerably higher uptake rate than the passive axial diffusion tube, and allows a higher flexibility of air pollution monitoring in outdoor and indoor environments. It can be used as an effective personal sampler for health and safety monitoring in workplace and public/social environments.

It is recommended that one sampler is used as a blank for each batch of samplers ordered.

The VOCs absorbed on to the sampler are extracted using solvent and determined by GC-MS analysis with reference to calibration curves from the analysis of standard solutions.

RAM Dimensions: 44mm diameter, 18mm height, 28mm sampling surface diameter.

Absorbent: Charcoal-based disc.

Recommended Exposure Periods: 4 hours (high concentration areas) to 1-week (time-weighted average studies).

Uptake Rates:

Benzene - 21 ml/min at 20 °C.

Toluene - 18 ml/min at 20 °C.

m/p Xylene - 16 ml/min at 20 °C.

Air Velocity: No substantial effect (above +/- 10%) of air velocity on the sampler performance in the range 0.15 to 0.8m/s.

Orientation: Not critical with respect to direction of air flow

Back Diffusion: No significant effect of exposure to zero concentration on the sampler performance. (Leak test meets EN13528 criteria)

Storage: Store in tins provided for up to 14 days 4-20°C in low humidity

Shelf Life: 14 days to start of exposure, 1 month after exposure when stored in accordance with published storage instructions.

Limit of Detection: Quantitative BTEX: <11ugm⁻³.

Semi-quantitative analysis as toluene equivalent: <0.2 mgm⁻³ over an 8-hour exposure period. Specific values available upon request.

Expanded Measurement Uncertainty (95% confidence level) based on field validation tests:

Benzene at 5 ug^m-³: +/- 15.0%

Toluene at 13 ug^m-³: +/- 9.7%

m/p Xylene - at 2.3 ug^m-³: +/- 17.0%

Desorption Efficiency: d = >0.96 for Benzene, Toluene, Ethylbenzene and Xylene.

Relevant Standards: The sampler has been validated for compliance to European Standard EN 13528-2: 2008 by an independent accredited laboratory. ISO 17025.