

Technical Data Sheet: TDS 1 DIF 100 RTU - NITROGEN DIOXIDE (NO₂).

This tube is designed for passively monitoring gaseous airborne Nitrogen Dioxide.



Description: Acrylic tube fitted with colored* and white thermoplastic rubber caps. The colored cap contains the absorbent.

The concentrations of nitrite ions and hence NO₂ chemically adsorbed are quantitatively determined by U.V./ Visible Spectrophotometry with reference to a calibration curve derived from the analysis of standard nitrite solutions. (Analysis carried out in accredited laboratories, in accordance with ISO 17025).

Suitable for carrying out spatial or localized assessments for NO₂ in ambient air or workplace monitoring. It can be used for co-location projects alongside an automatic analyzer to obtain bias correction factors.

Tube Dimensions: 71.0mm length x 11.0mm internal diameter.

Absorbent: Two types of Triethanolamine absorbent are available:

20% Triethanolamine / De-Ionized Water - *GREY CAP

50% Triethanolamine / Acetone – *RED CAP

*Colors of the absorbent cap can be changed to suit customer requirements.

Recommended Exposure Periods: 2 –4 weeks.

Uptake Rate: $68.8 \times 10^{-6} \text{ m}^3 \text{ hr}^{-1}$.

Air Velocity: Influence of Wind Speed < 10% between 1.0 and 4.5 msec^{-1} (* based on original data).

Storage: Store in a dark, cool environment preferably between 5-10 degrees centigrade.

Shelf Life: 12 weeks from preparation date.

Desorption Efficiency: $d = 0.98$ (determined using N.I.S.T. Standard Analytes).

Limit of Detection: 20% TEA/Water: 0.8 ppb (1.6 ugm^3) over a 2-week exposure period.
50% TEA/Acetone: 1.4 ppb (2.7 ugm^3) over a 2-week exposure period.

Analytical Expanded Measurement Uncertainty: +/- 10.9 %.

Special Factors: Potential interference from Nitrous Acid, Peroxy Acetyl Nitrate, which could increase levels of nitrate.