

## Technical Data Sheet: TDS 1 DIF 100 RTU - NITROGEN DIOXIDE (NO<sub>2</sub>).

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



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

The concentrations of nitrite ions and hence NO<sub>2</sub> chemically adsorbed are quantitatively determined by U.V./ Visible Spectrophotometry with reference to a calibration curve derived from the analysis of standard nitrite solutions (U.K.A.S. Accredited Methods).

Suitable for carrying out spatial or localized assessments for NO<sub>2</sub> 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 / DeIonised Water - \*GREY CAP

50% Triethanolamine / Acetone – \*RED CAP

\*Colours 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  $\text{msec}^{-1}$  (\* 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 ( $1.6 \text{ ugm}^3$ ) over a 2-week exposure period.  
50% TEA/Acetone: 1.4 ppb ( $2.7 \text{ ugm}^3$ ) over a 2-week exposure period.

**Analytical Expanded Measurement Uncertainty:** +/- 10.9 %.

**Relevant Standards:** BS EN 13528 Parts 1-3: 2002/3

**Reference document:** ED48673043 Issue-1A Feb 2008 – AEA Energy and Environment

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