

## 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 colored\* and white thermoplastic rubber caps. The colored cap contains the absorbent.

The concentrations of Nitrite ions and hence NO<sub>2</sub> chemically adsorbed are quantitatively determined by UV/ Visible Spectrophotometry with reference to a calibration curve derived from the analysis of standard nitrite solutions (ISO 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 preparations of Triethanolamine (TEA) 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.

**Air Velocity:** Influence of Wind Speed < 10% between 1.0 and 4.5 msec<sup>-1</sup> (\* based on original data).

**Storage:** Store in a dark, cool environment preferably between 5-10°C.

**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 – less than 1.5  $\mu\text{g}\cdot\text{m}^{-3}$  over a 4-week exposure period. Specific values available upon request.

50%TEA/Acetone – less than 2  $\mu\text{g}\cdot\text{m}^{-3}$  over a 4-week exposure period. Specific values available upon request.

**Analytical Expanded Measurement Uncertainty:** available upon request.

**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.