Analysis Method for Nitrogen Dioxide Rapid Air Monitor

**Uptake rate** (ml/min) = 0.5102 x temp (°C) + 18.697

Instrument and reagent preparation:
Suitable instruments and reagents can be found by referring to the relevant EPA or NIOSH methods.

Ensure correct calibration of all equipment. Create a calibration curve for the spectrophotometer using standard solutions.
Holding the RAM cap tab, unscrew the main body from the base plate.
Remove particle filter
Using tweezers, remove the sorbent disk and place in a 10ml glass vial.
Using a clean calibrated dispenser, transfer 6ml of working reagent into the vial.
Cover the vial and agitate by vortexing for 15 seconds. Leave to stand for 30 minutes to allow color to develop.
Transfer a sufficient volume to a cuvette and analyze the sample using a spectrophotometer.
Compare result to calibration curve to obtain mass of nitrite on the sample.

The calculation of the atmospheric concentration of Nitrogen Dioxide using the mass of nitrite on the sampler is made as follows:

\[ \mu g/m^3 = \frac{m_s}{e \times U \times t} \times 10^6 \]

Where

- \( M_s \) = mass of nitrate found in the sample in \( \mu g \)
- \( e \) = efficiency of extraction of nitrite
- \( t \) = sampling time in minutes
- \( U \) = sampler uptake rate at actual conditions of sampling in ml/min