NO_x Nitrogen Oxides

airpointer®

About Nitrogen Oxides:

The nitric oxide (NO) molecule is quite reactive and unstable. In air, it reacts with oxygen to form the poisonous nitrogen dioxide (NO_2).
Human activity has drastically increased the production of nitric oxide in combustion chambers, e. g. automobile engines and power plants.

Health and environmental effects:

Nitric oxide has a plethora of effects, primarily in the lung but also in other organs, such as the spleen, liver and blood. In the blood it leads to the creation of methaemoglobin, which avoids the transport of oxygen. Nitric oxide in the air may later convert to nitric acid which has been implicated in acid rain. Furthermore, both NO and NO_2 participate in the ozone layer depletion.

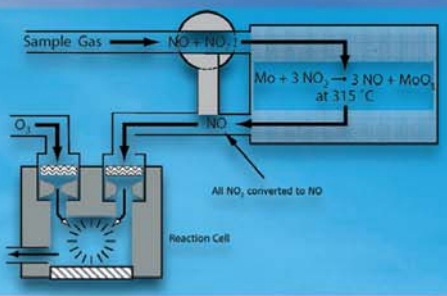
Sources: *WHO Regional Publications, European Series, No. 91, „Air quality guidelines for Europe", 2nd edition, 2000; GESTIS Stoffdatenbank (http://www.hvbg.de/d/bia/fac/stoffdb/index.html); U.S. Environmental Protection Agency (www.epa.gov)*

Nitrogen Oxides and the airpointer®

Measurement Principle: Chemiluminescence (EN14211)

NO_x / Chemiluminescence:

Nitric Oxides in the sample gas reacts with Ozone and this reaction results in electrically excited molecules. These molecules release their excess energy by emitting photons, which are measured by a photomultiplier tube.



Component	EU Directive Methodology	Measurement Principle	Range	Units	Lower Detectable Limit	Zero Drift	Span Drift
Nitrogen Oxides ($NO/NO_2/NO_x$)	Chemiluminescence (EN14211)	Chemiluminescence	Dynamic ranges for NO, NO_2 and NO_x up to 10 ppm	ppb, ppm, µg/m³, mg/m³	< 2.0 ppb	< 1.0 ppb/ 24 hours < 2.0 ppb/ 7 days	< 1.0 % of reading/ 24 hours < 2.0 % of reading/ 7 days

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