Nitric Oxide Encyclopedia Article

Nitric Oxide

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Nitric Oxide

Nitric **oxide** (sometimes called **nitrogen** monoxide) has the chemical formula NO. It is a colorless gas at standard **temperature** and pressure and it is slightly toxic. Nitric oxide is generally prepared by reacting **copper** and **nitric acid** or industrially by **oxidation** of **ammonia** over a catalyst (this is the first step in the manufacture of nitric oxide by the Ostwald process). At high pressure decomposition occurs to give other oxides of nitrogen, chiefly N_2O and NO_2. This latter oxide can also be produced by oxidation with atmospheric **oxygen**. Nitric oxide re acts with **halogens** to produce a compound with the chemical formula of halogenNO. These are the nitrosyl halides that act as strong oxidizing agents. Loss of an **electron** will give NO^+, the nitrosonium **ion** which is also a strong oxidizing agent.

Nitric oxide is an important **hormone** in the human body. It causes the muscles surrounding blood vessels to relax, which allows an increased passage of blood. It can also help the immune system kill invading parasites.

Nitric oxide is also present in the atmosphere. Atmospheric nitric oxide is either naturally occurring (produced by electrical discharges) or is present as a pollutant from the **combustion** of organic matter and also from the internal combustion engine. In non-polluted air nitric oxide is found at levels of 0.01 ppm, but in smog it can be present in concentrations as high as 0.2 ppm.