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Ozone - Benefit or Detriment?

The ozone atmosphere (15 kilometers above the earth) protects people from dangerous UV rays, but on the surface of the earth ozone can threaten our health. High ozone concentrations during the summer months can have a severe effect on health. Ozone (O₃) in the lower atmosphere has a toxic effect on humans, animals, and plants. Ozone that builds up under insulation in connection with exhaust fumes or sulfur dioxide can lead to long-term lung damage. It can also cause inflammation and eventually deterioration of the respiratory tracts, provoke asthma, and lead to serious allergic reactions.

Ozone is not only useful in the atmosphere, but also in industries. It is used for processing, disinfection, and sterilization. It is regarded as the safest way to process and keep water sterilized. In Germany, ozone is the most widely used oxidant. Using ozone safely can place a high demand on water process or air outlet systems. By installing fixed gas detection systems, leaks caused by system parts can be monitored around the clock. Professional trade associations recommend the use of fixed systems for ozone production of more than 2 g/h to ensure safety in operating areas.

Origin of Ozone

Most ozone builds up out of nitric oxides during intense sunlight, and hydrocarbons intensify this process. These contaminants mainly come from car emissions. In several chemical reactions nitrogen dioxide (NO₂) builds up, the UV beams from sunlight extract one oxygen atom from this compound; the oxygen atom combines with an oxygen molecule (O₂), and ozone is formed.



The Micro III and Micro IV only weighs between 2 and 4 oz. and is 3.5 inches tall. Via an electrochemical sensor it can monitor ozone in a range between 0 and 1 ppm and therefore reliably monitor the TLV. State-of-the-art processing technology allows the Micro III and Micro IV to operate for up to 9 months on a single AA-battery. The user can change the battery without tools.

The sensor is designed to plug-in and can be exchanged with any one of a series of other pre-calibrated sensors. The Micro III and Micro IV adjusts itself to the new sensor, the new gas, and the new detection range without any action on the part of the user. The Micro III and Micro IV has 3 alarm thresholds and an additional low battery alarm. A loud alarm buzzer and a 360° visible alarm light ensure safety. Per IP 56, water and



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dust cannot enter the instrument. The detector is, of course, certified for use in explosion-endangered areas.

Picture
MICRO IV Single-gas detector

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