



Hydrogen Sulphide

Formula: H₂S

CAS: 7783-06-4

Industries: Petroleum production/Refining and Wastewater treatment

Detection Method: ARA H₂S Single Gas Detector

Hydrogen Sulphide (H₂S) is a gas commonly found during the drilling and production of crude oil and natural gas, plus in wastewater treatment and utility facilities and sewers. The gas is produced as a result of the microbial breakdown of organic materials in the absence of oxygen. Colourless, flammable, poisonous and corrosive, H₂S gas is noticeable by its rotten egg smell.

H₂S - EXPOSURE AT HIGHER LEVELS CAN RESULT IN DEATH ALMOST INSTANTANEOUSLY

Hazardous Properties of H₂S Gas

Heavier than air, H₂S gas accumulates in low-lying areas of poorly ventilated spaces. In oil and gas applications, sour gas (products containing H₂S gas) in the presence of air and moisture may form sulfuric acid, capable of corroding metals. Facility equipment, including the internal surfaces of various components, faces reduced durability and impact strength, potentially leading to premature failure.

The primary route of exposure is inhalation and the gas is rapidly absorbed by the lungs. Absorption through the skin is minimal. People can smell the "rotten egg" odour of hydrogen sulphide at low concentrations in air. However, with continuous low-level exposure, or at high concentrations, a person loses his/her ability to smell the gas even though it is still present (olfactory fatigue). This can happen very rapidly and at high concentrations, the ability to smell the gas can be lost instantaneously.

Health & Safety Impacts Of H₂S

Short-Term;

H₂S irritates the mucous membranes of the body and the respiratory tract, among other things. Following exposure, short-term, or acute, symptoms may include a headache, nausea, convulsions, and eye and skin irritation. Injury to the central nervous system can be immediate and serious after exposure.

Long-Term;

H₂S does not accumulate in the body, but repeated/prolonged exposure to moderate levels can cause low blood pressure, headache, loss of appetite and weight loss. Prolonged exposure to low levels may cause painful skin rashes and irritated eyes. Repeated exposure over time to high levels of H₂S may cause convulsions, coma, brain and heart damage and even death.

Hydrogen Sulphide Exposure Limits

The Occupational Safety and Health Administration (OSHA) defines Permissible Exposure Limits (PELs) to H₂S gas as follows:

- General Industry Ceiling Limit: 20 ppm
- General Industry Peak Limit: 50 ppm (up to 10 minutes if no other exposure during shift)
- Construction 8-hour Limit: 10 ppm
- Shipyard 8-hour limit: 10 ppm

Hydrogen Sulphide Detection



Personal Single Gas Instruments

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