

# Spotlight On Safety

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## HYDROGEN SULFIDE

***Hydrogen sulfide is a colorless, extremely hazardous, poisonous gas with the pungent and characteristic odor of rotten eggs. It occurs naturally in sewers, coal pits, sulfur springs, gas wells, and as a product of decaying organic matter. It is commonly generated as a byproduct of many research, industrial, and manufacturing processes. It is also a flammable gas, with an ignition temperature of 260°C. The information below is provided to inform you of the hazards and protection measures.***

### ***Hazards***

- Classified as a chemical asphyxiant (similar to carbon monoxide/ cyanides): it interferes with cellular respiration and oxygen, causing biochemical suffocation
- Low concentrations (less than 1 ppm) for the gas in air can be easily detected
- It is an insidious poison, rapidly fatiguing one's sense of smell at high concentration levels and making it impossible to tell the difference between a strong odor (high concentration) versus a faint odor (low concentration)
- Prolonged exposures to lower levels can lead to:
  1. Bronchitis
  2. Pneumonia
  3. Migraines
  4. Pulmonary edema
  5. Loss of motor coordination
- Higher concentrations within seconds after only one or two inhalations cause:
  1. Headaches/ dizziness
  2. Severe irritation of the eyes, mucous membranes and upper respiratory system (causing difficulty in breathing)
  3. Sudden loss of consciousness
  4. Collapse, coma or death

### ***Exposure Pathways***

- Primary route is inhalation

### ***Recommended Protection***

- Regular monitoring to identify areas/ operations likely to exceed Cal/OSHA's permissible exposure limit (10 ppm)
- Successfully complete Confined Space Entry training
- Use of direct reading instrumentation before entering confined spaces (manholes, tanks, pits, large reaction vessels) that may contain/accumulate Hydrogen sulfide gas
- Areas that routinely pose overexposure hazards must be equipped with continuous monitoring instruments

Visit [www.ehs.ucr.edu](http://www.ehs.ucr.edu) for additional information or call EH&S at 951-827-5528 for questions about your workplace procedures, potential exposures, confined spaces and training, or if concentration levels can't be reduced with engineering equipment/ ventilation systems.