



Weekly Safety Meeting

Hydrogen Sulfide

Hydrogen Sulfide, or H_2S , is a toxic gas that is colorless and highly flammable. Other names for H_2S include sewer gas, swamp gas, manure gas and stink damp. In addition to gas form, H_2S can exist as a liquid compressed gas.

Where H_2S Is Found

H_2S gas occurs naturally in hot springs, crude petroleum, natural gas and as a byproduct of decaying/decomposing organic material. However, it is also encountered in a diverse number of industries such as wastewater treatment, oil & gas drilling, refining, mining, pulp & papermill processing, agriculture, canneries, and construction. H_2S is slightly denser than air, so it can collect in ground, low-lying, or below-ground areas such as tunnels, basements, manholes, sewer lines, and utility vaults.

Your Sense of Smell and H_2S

The primary route H_2S enters the body is through inhalation. H_2S smells like rotten eggs and can be smelled at very low concentrations in air. The smell should be a warning that the gas is present— H_2S can be fatal, even at much lower concentrations than other hazardous gases. However, due to olfactory fatigue, at low concentrations or high concentrations, people can lose the ability to smell the gas. Repeated exposure to the gas can cause people to have reactions at progressively lower levels. Because of this, you should never rely on your sense of smell to indicate the ongoing presence of H_2S . Instead, use proper testing and monitoring devices to detect H_2S .

Health Effects of H_2S Exposure

H_2S is a chemical asphyxiant and irritant, so it affects the amount oxygen your lungs can use while irritating the respiratory tract and central nervous system. Symptoms can occur within taking only 1-2 breaths of H_2S .

Low Levels of H_2S Can Cause:

- Eye/nose/throat/lung irritation
- Watering eyes
- Cough
- Shortness of breath
- Headache

- Fatigue
- Digestive disturbances
- Insomnia
- Irritability

Moderate Concentrations of H₂S Can Cause:

- Severe eye and respiratory irritation
- Coughing
- Difficulty breathing
- Accumulation of fluid in the lungs
- Headache
- Dizziness
- Nausea
- Vomiting
- Staggering
- Excitability

High Concentrations of H₂S Can Cause:

- Shock
- Convulsions
- Inability to breathe
- Instantaneous lack of consciousness
- Coma
- Death
- Protection Against H₂S Exposure

H₂S and Confined Spaces

Your workplace may have confined spaces where there is H₂S. Before entering an area where H₂S may be present:

A qualified person must test the air using monitoring equipment such as H₂S detector tubes or a multigas meter. Testing should also determine if fire/explosion precautions are necessary.

If the gas is present, the space/area must be continually ventilated to remove the gas.

If the gas cannot be removed, the worker entering the space must use appropriate personal protective, rescue, and communication equipment.

Workers must be monitored for overexposure. When in doubt about monitoring and entering confined spaces, reference OSHA's Confined Space Standard.

Entering Dangerous H₂S Atmospheres

H₂S gas above 100 ppm is Immediately Dangerous to Life and Health (IDLH). Entry into IDLH atmospheres can only be made using: 1) A full facepiece pressure demand SCBA with 30 min. minimum service life or 2) a combination full facepiece pressure demand supplied-air respirator with an auxiliary self-contained air supply.

If H₂S levels are below 100 ppm, an air-purifying respirator with an H₂S filter cartridge/canister may be used with a full facepiece respirator. If a half-mask respirator is used, tight-fitting goggles must also be used to prevent eye irritation.

Summary

If H₂S is present at your workplace, there should be health and safety practices in place. Make sure to learn all you can about H₂S and be properly trained and suited up before entering a hazardous environment.

BE AWARE...H₂S CAN BE DEADLY!

Safety Meeting Sign-In Sheet

Supervisor:	Subject:
Location:	Date:
Conducted By:	Trainer Signature:

Name (print clearly)	Signature	Comments / Safety Concerns / Training Requests