



# WEEKLY SAFETY MEETING

## HYDROGEN SULFIDE (H2S)

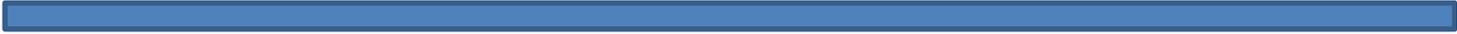
Hydrogen sulfide is a colorless, flammable, extremely hazardous gas with a “rotten egg” smell. People can smell the “rotten egg” odor of hydrogen sulfide at low concentrations in air. However, with continuous low-level exposure, or at high concentrations, a person loses his/her ability to smell the gas 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. Therefore, DO NOT rely on your sense of smell to indicate the continuing presence of hydrogen sulfide or to warn of hazardous concentrations.

In addition, hydrogen sulfide is a highly flammable gas and gas/air mixtures can be explosive. It may travel to sources of ignition and flash back. If ignited, the gas burns to produce toxic vapors and gases, such as sulfur dioxide. It is heavier than air and can collect in low-lying and enclosed, poorly ventilated areas such as industrial and food producing facilities, piping and corroded pipe repairs, pre-heat exchangers, basements, manholes, sewer lines wastewater treatment, excavations deeper than 4 feet, and underground telephone/electrical vaults, manure storage pits. It occurs naturally in crude petroleum and natural gas, and can be produced by the breakdown of organic matter and human/ animal wastes (e.g., sewage). Hydrogen sulfide can also exist as a liquid compressed gas. OSHA has set an acceptable ceiling limit for hydrogen sulfide of 20 parts hydrogen sulfide per 1 million parts of air (20ppm) in the workplace.

Health effects vary with how long, and at what level, you are exposed. Asthmatics may be at greater risk. The primary route of exposure is inhalation and the gas is rapidly absorbed by the lungs. Absorption through the skin is minimal. Symptoms from low exposure include coughing, eye inflammation, headache, fatigue, irritability, insomnia, digestive disturbances and weight loss. High concentrations could cause shock, convulsions, inability to breath, unconsciousness, coma and death. These effects can occur within a few breaths, possibly a single breath. Contact with liquid hydrogen sulfide causes frostbite. If clothing becomes wet with the liquid, avoid ignition sources, remove the clothing and isolate it in a safe area to allow the liquid to evaporate.

### Safe Work Practices

- ✚ Wherever possible, exposure should be minimized by implementing adequate engineering controls and safe work practices. Our projects are typically multi-employer worksites. Communication must be made with the host facility to ensure our employees are not exposed to the above recommended levels.
- ✚ For work within confined spaces, use appropriate procedures for identifying hazards, monitoring and entering confined spaces.
- ✚ The air needs to be tested for the presence and concentration of hydrogen sulfide by a qualified person using test equipment. This individual also determines if fire/explosion precautions are necessary.
- ✚ If gas is present, the space should be ventilated and retested.
- ✚ Atmospheres containing high concentrations (greater than 100 ppm) are considered immediately dangerous to life and health (IDLH) and a self-contained breathing apparatus (SCBA) is required. No entry into and IDLH atmosphere will be made by a Winger employee. Winger employees are not trained in the use of self-contained breathing apparatus (SCBA) or rescue training under these circumstances.
- ✚ Winger’s MSA 3200 full face respirator cartridges DO NOT protect you from Hydrogen Sulfide.
- ✚ Protective Engineering controls and work practices are generally sufficient to reduce exposures to at or below the PEL/STEL without the use of respirators. Where an area has been determined to be contaminated with hydrogen sulfide, work will be stopped until further evaluation and engineering practices can be implemented to prevent further exposure to Winger employees.
- ✚ Should an alarm sound on an H2S detector, immediately evacuate the area by holding your breath and moving quickly upwind. Immediately notify your foreman and safety director if you feel you have been exposed to or are developing potential signs or symptoms of hydrogen sulfide exposure. Do not re-enter the area until it has been determined safe for re-entry.



Meeting Date: \_\_\_\_\_  
Supervisor: \_\_\_\_\_

Trainer: \_\_\_\_\_  
Location: \_\_\_\_\_

### Attendees: (Please print clearly)

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____



# WEEKLY SAFETY MEETING

## HYDROGEN SULFIDE (H2S) QUIZ

- 1. Hydrogen sulfide (H2S) is a colorless, flammable, extremely hazardous gas with a rotten egg smell.  
True or False? \_\_\_\_\_
- 2. Hydrogen Sulfide (H2S) is not flammable. True or False? \_\_\_\_\_
- 3. Do NOT rely on your sense of smell alone.  
True or False? \_\_\_\_\_
- 4. Ways Winger employees could be exposed to H2S are:
  - A. Excavations > than 4 feet
  - B. Manholes/Electrical Vaults
  - C. Wastewater Treatment areas
  - D. Piping
  - E. All of the above
 \_\_\_\_\_
- 5. Health effects vary from how long and at what level you are exposed to. True or False? \_\_\_\_\_
- 6. The primary route of exposure is through your feet. True or False? \_\_\_\_\_
- 7. Safe work practices include:
  - A. Confined space procedures
  - B. Testing the air
  - C. Ventilation
  - D. Immediately exiting the work space if the H2S sensor alarms
  - E. All of the above
 \_\_\_\_\_
- 8. The MSA 3200 full face respirator will protect you from H2S atmospheres. True or False? \_\_\_\_\_
- 9. Anyone can wear a SCBA without training. True or False? \_\_\_\_\_
- 10. You may reenter the work space as long as you feel it's safe?  
True or False? \_\_\_\_\_



Printed Name: \_\_\_\_\_ Trained by: \_\_\_\_\_

Signature: \_\_\_\_\_ Trained by Signature: \_\_\_\_\_

Date: \_\_\_\_\_ Location: \_\_\_\_\_