SAFETY UNLIMITED, INC.

Weekly Safety Meeting

Hydrogen Sulfide

Hydrogen sulfide is a colorless, flammable, extremely hazardous gas with a "rotten egg" smell. It occurs naturally in crude petroleum and natural gas and can be produced by the breakdown of organic matter and human/animal wastes (i.e., sewage).

It is heavier than air and can collect in low-lying and enclosed, poorly ventilated areas such as basements, manholes, sewer lines, and underground telephone/electrical vaults.

It is also used or is a by-product in many industrial processes such as:

- Petroleum production and refining;
- Sewer and wastewater treatment;
- Agricultural silos and pits;
- Textile manufacturing;
- Pulp and paper processing;
- Food processing;
- Hot asphalt paving; and
- Mining

Detection by smell:

- It can be smelled at low levels, but with continuous low-level exposure or at higher concentrations you lose your ability to smell the gas even though it is still present.
- At high concentrations your ability to smell the gas can be lost instantly.
- **DO NOT** depend on your sense of smell for indicating the continuing presence of this gas or for warning of hazardous concentrations.

Health effects:

- Health effects vary with how long, and at what level, you are exposed. Asthmatics may be at greater risk.
- Low concentrations – irritation of eyes, nose, throat, or respiratory system; effects can be delayed.
- Moderate concentrations – more severe eye and respiratory effects, headache, dizziness, nausea, coughing, vomiting and difficulty breathing.
- High concentrations – shock, convulsions, unable to breathe, coma, death; effects can be extremely rapid (within a few breaths).

Evaluate Exposure:

- **Identify processes that could release or produce hydrogen sulfide**. This includes identifying known sources of hydrogen sulfide and evaluating possible fire and explosion hazards.
  - Use a Process or Job Hazard Analysis for identifying and controlling hazards.
- **Test (monitor) the air for hydrogen sulfide**. This must be done by a qualified person.
  - Use the right test equipment, such as an electronic meter that detects hydrogen sulfide gas.

Conduct air monitoring prior to and at regular times during any work activity where hydrogen sulfide exposure is possible.

When working in confined spaces, air monitoring must be conducted in accordance with the applicable OSHA standards. Detector tubes, direct reading gas monitors, alarm-only gas monitors, and explosion meters are examples of monitoring equipment that may be used to test permit space atmospheres.

Control Exposures:

Use exhaust and ventilation systems to reduce hydrogen sulfide levels. Make sure that the system is:

- Non-sparking;
- Grounded;
- Corrosion-resistant;
- Separate from other exhaust ventilation systems; and
- Explosion-proof

These safety measures are important because hydrogen sulfide is flammable and can corrode materials if they are not properly protected.

When working in confined spaces, ventilation should operate continuously and must be conducted in accordance with the applicable OSHA standards.

Remember:

When working in an area where hydrogen sulfide is present, every worker should be equipped with their own hydrogen sulfide detector that will sound an alarm if the level in the atmosphere reaches 10 ppm.

- The detector should be worn below the neck.
- A single alarm activation will require that all employees evacuate the area.

Those who work the safest way…live to work another day!!

Safety Meeting Sign-In Sheet

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

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