

## **Clearheart Construction Co., Inc.**

### **Hydrogen Sulfide –H<sub>2</sub>S**

#### **HAZARDOUS JOB SITE CHEMICAL EXPOSURE**

As part of process safety management of highly hazardous chemicals, prior to actual work in the petrochemical industry, our employees will be given training on negating the hazards relating to possible chemical exposures in the areas in which we are working.

Hydrogen sulfide hazards may present themselves in refineries, drilling operations, recycled drilling mud, tank gauging, tank batteries, wells, field maintenance, etc. at a petrochemical plant.

This training of the facility operator's emergency/contingency plan would include identification of the various hazardous chemicals, their location, specific actions to take should there be an inadvertent spill, leak, or release of hazardous chemical gases. Also during this pre-work training, all facility safety rules would be explained.

Actions would include notification of personnel, evacuation of personnel in the area to a safe zone, training on the specific chemicals that may be released. The importance of wind direction, whether the gas is heavier or lighter than air, flammable or explosive, corrosive, means to detect the gas such as odor (and use of personal gas monitors), means to protect the employees through PPE, especially respiratory protection and the use of full face respirator (gas mask) with a organic vapor canister or self-contained breathing apparatus or airline respirator escape SCBA.

Per our Hazard Communication Plan, we will keep on site, and readily available, MSDS for each chemical to which we may be exposed. This information will be provided by the facility operator.

#### **Hydrogen Sulfide – H<sub>2</sub>S:**

##### **NIOSH Pocket Guide to Chemical Hazards – Hydrogen Sulfide H<sub>2</sub>S**

Hydrogen Sulfide – H<sub>2</sub>S is toxic, and colorless with the odor of rotten eggs at low concentrations. It is soluble in water and is flammable.

Over time at low concentrations, the ability to smell Hydrogen Sulfide –H<sub>2</sub>S may diminish therefore, depending on the facility at which we are working a personal or area monitors may be required. These personal or area monitors will be pre-set to go off when the PEL exceeds 20 PPM, 1910 (Industry) or 10 PPM (Construction).

If a monitor alarm sounds, the employee will follow the emergency procedures in place by the host contractor which would include donning an appropriate respirator, see below, vacating the area, and notifying others. If

there is a potential for an uncontrolled release of hydrogen sulfide, this situation could represent an emergency. Such an emergency release would be covered under 29 CFR 1910.120, the Hazardous Waste and Emergency Response (HAZWOPER) standard [and the employee will follow the host's established procedure for emergency evacuation and response], unless it were an incidental release, as defined in the standard, 29 CFR 1910.120(a)(3), where there is no potential safety or health hazard. Paragraph (q) of 29 CFR 1910.120 covers emergency responses regardless of location.

Employees must be aware of the owner's site specific contingency/emergency plans.

Exposure routes are inhalation, eye or skin. Health effects include irritation to the eyes, respiratory system distress, damage to the nerve centers of the brain which controls breathing, apnea, coma, convulsions, eye pain dizziness, headache. As a liquid, the health effect would be frostbite.

Respiratory protection would include:

1. Self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive pressure mode.
2. Supplied air respirator that has a full facepiece and is operated in a pressure-demand other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus.
3. Air-purifying, full-facepiece respirator (gas mask) with a chin style, front or back-mounted organic vapor canister for hydrogen sulfide.
4. An appropriate escape-type, self-contained breathing apparatus.