HYDROGEN SULFIDE FACT SHEET

North Carolina Division of Public Health ● Occupational and Environmental Epidemiology Branch

Chemical Information

- Hydrogen sulfide is a colorless gas at room temperature.
- Has a strong rotten egg-like odor which rapidly fatigues the sense of smell
- Flammable
- Used in the production of sulfur and sulfuric acid
- Can be formed from industrial activities, such as food processing, coke ovens, paper mills, tanneries, liquid manure tanks, underground sewers and petroleum refineries.

Regulatory Standards

- The Environmental Protection Agency (EPA) Acute Exposure Guideline Level 1 (AEGL - 1) for hydrogen sulfide is 0.33 ppm for an 8 hour period.

Hazards Identification

Acute Exposure:

Inhalation

- Low levels of exposure can cause headaches, poor memory, tiredness, balance issues and irritation of the eyes, nose and throat.
- High levels of exposure can cause loss of consciousness and convulsions.
- For some high level exposure cases, permanent or long-term headaches, poor attention span, poor memory and poor motor function have been observed.
- In extreme cases, respiratory arrest can occur which can be fatal.
- Intermediate exposure levels can upset the gastrointestinal tract, cause nausea, diarrhea and pulmonary edema.

Dermal

- Contact with liquid hydrogen sulfide can result in frostbite to the contacted regions.

Stability & Reactivity

- Hydrogen sulfide forms metal sulfides when it comes into contact with metals.
- Reacts with strong oxidizers and strong nitric acid
- Burning hydrogen sulfide gas results in the formation of the toxic gas sulfur dioxide.

Handling & Storage

- Store in cool, dry, well-ventilated location.
- Separate from oxidizing materials.

Glossary

The Environmental Protection Agency (EPA) defines Acute Exposure Guideline Levels (AEGLs) as threshold exposure limits for the general public that are applicable to emergency exposure periods ranging from 10 minutes to eight hours. The three AEGLs are defined as follows:

AEGL-1 – airborne concentration of a substance at which the general population could experience notable discomfort, irritation or certain asymptomatic non-sensory effects.

AEGL-2 – airborne concentration of a substance at which the general population could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.

AEGL-3 – airborne concentration of a substance at which the general population could experience life threatening health effects or death.