

# SAFE WORK PRACTICES

## H<sub>2</sub>S (HYDROGEN SULPHIDE) HAZARDS

*\*This information does not take precedence over OH&S. All employees should be familiar with the Saskatchewan Employment Act and the OH&S Regulations.*

**General:** H<sub>2</sub>S (hydrogen sulphide, sour gas) *is a very toxic and flammable gas*. Exposure levels above 500 ppm rapidly cause unconsciousness and death. Less heavy concentrations will cause throat and eye irritation, difficulty breathing and eventually hemorrhage and death. Any worker who is in contact with H<sub>2</sub>S gas above the allowable exposure limits must wear self contained breathing apparatus (SCBA).

### Emergency Procedure

1. Get out of the area immediately.
2. Alarm others to evacuate.
3. Check area.
4. Put on SCBA.
5. Rescue victims to a clean air area.
6. Revive victims (using artificial respiration, CPR).
7. Obtain medical aid.

### Properties of H<sub>2</sub>S:

- colorless gas
- heavier than air (H<sub>2</sub>S=1.189, air=1); may accumulate in low spots, inside firewalls, in ditches, etc.
- flammable (4.3 – 4.6% explosive limits)
- soluble in water 4:1 (released on agitation) – *a sump or tank may test very low in H<sub>2</sub>S, but when the water in the sump or the “bottoms” in the tank are stirred, it may liberate a considerable volume of H<sub>2</sub>S*
- rotten egg odor (not reliable)
- boiling point of -76° F (-60° C) – *it's a gas*

### Exposure Limits:

- 10 ppm allowable 8 hour exposure
- 15 ppm allowable 15 minute exposure (only four 15 minute exposures are permitted during any shift, and there must be 60 minutes between each exposure)
- 19 ppm maximum exposure for 15 minutes
- 20 ppm ceiling level – no exposure allowed
- 30 ppm may bother eyes or throat
- 50 ppm may kill sense of smell
- 100 ppm may burn eyes and throat
- 500 ppm may be fatal in a few minutes
- 1000 ppm is quickly fatal