

# Hydrogen sulfide

List tasks on the jobsite where hydrogen sulfide exposure could occur.

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## Explain dangers

Hydrogen sulfide is a colourless gas identified by its strong rotten egg smell. Also known as H<sub>2</sub>S, sour gas, and sewer gas, hydrogen sulfide is naturally emitted when human and/or animal waste breaks down. It can also be generated by industrial operations—including wastewater treatment—as well as during excavation work and hot asphalt paving.

The main route of exposure to hydrogen sulfide is via inhalation (breathing in) or eye contact. Health effects at low concentrations include:

- Nose and/or throat irritation
- Headache, dizziness
- Eye irritation
- Reduced sense of smell
- Disorientation

Health effects at high concentrations include:

- Paralysis of the muscles that control breathing
- Death within minutes

Hydrogen sulfide is heavier than air. It will stay low to the ground—and will flow into areas below ground level, such as pits, tunnels, and manholes.

At high concentrations and under the right conditions, hydrogen sulfide can catch on fire and explode.

## Identify controls

- If you smell rotten eggs, leave the area immediately and notify others nearby, including your supervisor.

- However, do not rely solely on your nose to determine the presence of hydrogen sulfide. The gas can decrease your sense of smell.
- If using a portable gas detector:
  - Ensure its sensors and lights are not blocked by your clothing or personal protective equipment.
  - Ensure it has been bump tested and calibrated prior to field use. If uncertain, ask your supervisor.
  - Ensure its batteries are charged.
  - **Note:** If you have not been trained in the use of your portable gas detector, notify your supervisor. You need to know how it works and what its alarms mean.
- Wear the right respiratory protection. Your respiratory protection will vary depending on the concentration of hydrogen sulfide in the environment. At high concentrations, a supplied-air respirator is needed.
- Ensure you are wearing airtight goggles when working in areas where hydrogen sulfide could be, or is, present.
- Avoid wearing contact lenses, as they can absorb hydrogen sulfide.
- Never attempt to perform a rescue in an area containing hydrogen sulfide, unless you are wearing appropriate respiratory protection.
- Hydrogen sulfide is flammable. Do not smoke or use any ignition sources near work areas where the gas may be present.

## Demonstrate

With your crew, go over the steps to take when hydrogen sulfide limits have been breached. This should include evacuation and notification procedures.