# Sewer Gas

## What is sewer gas?

Sewer gas is a complex mixture of toxic and non-toxic gases that can be present at varying levels depending upon the source. It is formed during the decay of household and industrial waste. Highly toxic components of sewer gas include hydrogen sulfide and ammonia.

Sewer gas also contains methane, carbon dioxide, sulfur dioxide, and nitrous oxides. In addition, chlorine bleaches, industrial solvents, and gasoline are frequently present in municipal and privately owned-sewage treatment systems.

## How are people exposed to sewer gas?

Sewer gas can enter a home through a floor drain, from a leaking or blocked plumbing roof vent, or (if the gases are in soil adjacent to the house) through cracks in foundations. Sanitary and farm workers can be exposed to sewer gas during the cleaning and maintenance of municipal sewers, manure storage tanks, and home septic tanks.

## What are the effects of exposure to sewer gas?

The principal risks and effects associated with exposure are:

- **Hydrogen sulfide poisoning.** Exposure to low levels of hydrogen sulfide causes irritation of the eyes and respiratory tract. Other symptoms include nervousness, dizziness, nausea, headache, and drowsiness. This gas smells like rotten eggs, even at extremely low concentrations. Exposure to high concentrations can interfere with the sense of smell, making this warning signal unreliable. At extremely high levels, hydrogen sulfide can cause immediate loss of consciousness and death.

- **Asphyxiation.** High concentrations of methane in enclosed areas can lead to suffocation as large amounts of methane will decrease the amount of oxygen in the air. The effects of oxygen defficiency include headache, nausea, dizziness and unconsciousness. At very low oxygen concentrations (<12%), unconsciousness and death may occur very quickly and without warning. Sewer gas diffuses and mixes with indoor air, and will be most concentrated where it is entering the home. It can accumulate in basements.

- **Explosion and fire.** Methane and hydrogen sulfide are flammable and highly explosive.

## How can I avoid being exposed to sewer gas?

- Flush floor and sink drains with water to prevent the traps in pipes to the sewer from drying out.

- Occasionally check the roof plumbing vent for blockage from debris such as leaves or bird nests.

- Never enter a municipal sewer line, manure-storage tank or any other large storage tank without proper training and equipment.

## What should I do if I suspect a problem?

First, following the odor, try to locate the point of entry, such as a basement floor drain. Check for a blocked rooftop plumbing gas vent. By adding water to the floor drain or removing debris from a roof plumbing stack vent you may be able to prevent sewer gas from entering your home. In the unlikely event that a leak in gas vent plumbing is behind walls, a plumber may be needed to find and fix it. Some local public health departments may be able to offer home inspections.

Symptoms of headache, nausea, dizziness, or drowsiness may indicate exposure to an odorless gas like methane or carbon monoxide, or to hydrogen sulfide, which smells of rotten eggs. Persons experiencing severe symptoms should seek immediate medical care.

If you suspect that high concentrations of sewer gas have accumulated in an enclosed space, you should evacuate the area and contact the fire department for assistance. Avoid creating an ignition source such a spark from an electrical appliance, match, or cigarette lighter.

## For more information

- Contact the Wisconsin Division of Public Health, Bureau of Environmental Health, PO Box 2659, Madison, WI 53701-2659, (608) 266-1120; or
- Visit the department's website, http://dhfs.wi.gov/eh

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