



TRICHLOROFLUOROMETHANE

What is TRICHLOROFLUOROMETHANE?

Trichlorofluoromethane is a colorless liquid or gas. It is a liquid at temperatures below 75°F. Yet this man-made chemical easily turns into a gas at temperatures above 75°F. This chemical is also called trichloromonofluoromethane, fluorotrichloromethane, fluorocarbon 11, propellant 11, Freon 11[®], Arcton 11[®] and Frigen 9[®].

Where can trichlorofluoromethane be found and how is it used?

This chemical can be detected in the air. It is also found in ground and surface water, and in breast milk. Historically, trichlorofluoromethane was used in consumer products including hair sprays, deodorants and cosmetics. Other former uses are for external medicines, products to control home and garden insects and pests, cleaners, spray paints, and floor and furniture polish.

In industry, trichlorofluoromethane was used as a refrigerant, a substance used to provide cooling. It was also used to make foam and as an active part of liquid-type fire extinguishers.

Trichlorofluoromethane harms the ozone layer, which protects the earth from the sun's ultraviolet radiation. Although trichlorofluoromethane is no longer made in the United States, existing stocks are allowed to be used.

How can people be exposed to trichlorofluoromethane?

You could be exposed to trichlorofluoromethane through:

Breathing it, if you are near a waste site containing trichlorofluoromethane. You can also breathe it when it turns into a vapor from polluted water.

Drinking it in ground water near a waste site containing trichlorofluoromethane.

Touching water containing trichlorofluoromethane.

Eye Contact by touching the eyes with water containing trichlorofluoromethane.

How does trichlorofluoromethane work and how can it affect my health?

Breathing strong vapors can cause an irregular heartbeat and be fatal. This can occur without any other warning symptoms. Since trichlorofluoromethane vapors are 4 to 5 times heavier than air, high levels can build up in low-lying areas.

Trichlorofluoromethane irritates the skin and eyes. Contact with the liquid causes frostbite. Exposure causes a person to feel lightheaded and dizzy. Repeated exposure causes dryness and cracking of the skin. Breathing trichlorofluoromethane irritates the lungs, causing coughing and/or shortness of breath.

Trichlorofluoromethane was not tested for its ability to cause cancer, nor its effects on reproduction.

How is trichlorofluoromethane poisoning treated?

There is no treatment just for trichlorofluoromethane exposure. A doctor will treat the symptoms.



What should I do if exposed to trichlorofluoromethane?

If you touch trichlorofluoromethane, wash the skin right away with plenty of warm water. Then wash with soap and water. Clothing that contacted trichlorofluoromethane should be taken off right away. Follow safety rules for removing the chemical from clothing. Be sure to tell the person washing the clothes of the dangers of trichlorofluoromethane.

What factors limit use or exposure to trichlorofluoromethane?

If you handle trichlorofluoromethane, practice extreme cleanliness. Wash hands, forearms and face with soap and water before eating, using tobacco products, using the bathroom, applying makeup, or taking medicine. To avoid skin contact, wear solvent-resistant gloves and clothing.

If drinking water is polluted with trichlorofluoromethane, use bottled water or another water source. If the water supply contains trichlorofluoromethane, avoid showering and other water uses since it could affect the skin.

Is there a medical test to show whether I've been exposed to trichlorofluoromethane?

If you think you were exposed, physicians can order a test to check for an irregular heartbeat.

Technical information for trichlorofluoromethane

CAS Number: 75-69-4

Chemical Formula: CCl_3F

Carcinogenicity (EPA): Trichlorofluoromethane has not undergone a complete evaluation and determination under U.S. EPA's IRIS program for evidence of human carcinogenic potential.

MCL (Drinking Water): There is no MCL for trichlorofluoromethane. Some states have guidelines ranging from 1,300 to 3,500 $\mu\text{g/L}$.

OSHA Standards: The OSHA time weighted average PEL, for an 8-hour period per day in a 40-hour week, is 1,000 ppm (5600 mg/m^3).

NIOSH Standards: The NIOSH short term exposure limit, a 15-minute time weighted average, not to be exceeded at any time during the work day is 1,000 ppm (5600 mg/m^3). IDLH: 2000 ppm.

References and Sources

American Conference of Governmental Industrial Hygienists (ACGIH). 2003. *Guide to Occupational Exposure Values*. Cincinnati, OH.

NIOSH Pocket Guide to Chemical Hazards. 2003. Atlanta, GA: U.S. Department of Health and Human Services.

U.S. E.P.A., Integrated Risk Information System, Trichlorofluoromethane, <http://www.epa.gov/IRIS/subst/0120.htm> - Accessed 1/5/10