

1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

What is 1,1,2-trichloro-1,2,2-trifluoroethane?

1,1,2-trichloro-1,2,2-trifluoroethane is a colorless man-made liquid or gas that has a strong odor in large amounts. At temperatures above 118 degrees F, it is a gas. This chemical is also called Freon® 113, Fluorocarbon 113, FC-113, Refrigerant 113, Ucon 113, or Arklone R-113.

Where can 1,1,2-trichloro-1,2,2-trifluoroethane be found and how is it used?

Since 1996, this chemical has not been produced in the United States. However, use of existing stocks is allowed. In the past, 1,1,2-trichloro-1,2,2-trifluoroethane was made in large amounts in the United States. It was used in industry as a solvent for degreasing and dry cleaning. Other uses were as a refrigerant, which is a substance used for cooling, such as in a refrigerator or air conditioner. 1,1,2-trichloro-1,2,2-trifluoroethane was used for fire extinguishers and to make foam.

1,1,2-trichloro-1,2,2-trifluoroethane is found in the soil and ground water at polluted industrial and waste sites. It is also found at low levels in air.

How can people be exposed to 1,1,2-trichloro-1,2,2-trifluoroethane?

You could be exposed to 1,1,2-trichloro-1,2,2-trifluoroethane through:

- **Breathing** it if you work where 1,1,2-trichloro-1,2,2-trifluoroethane is used. You could also breathe it near a site polluted with 1,1,2-trichloro-1,2,2-trifluoroethane. Exposure can occur from breathing vapors from water polluted with 1,1,2-trichloro-1,2,2-trifluoroethane.
- **Swallowing** it at work by eating food or drinking liquids near where 1,1,2-trichloro-1,2,2-trifluoroethane is used. You can drink 1,1,2-trichloro-1,2,2-trifluoroethane in polluted water.
- **Touching** it if you work where 1,1,2-trichloro-1,2,2-trifluoroethane is used. You can contact it by touching water containing 1,1,2-trichloro-1,2,2-trifluoroethane.
- **Eye contact** if water containing 1,1,2-trichloro-1,2,2-trifluoroethane gets in the eyes. (This is unlikely.)

Poison Control Center 24/7 Emergency Contact Number: 1-800-222-1222
DPH 24/7 Contact Number: 1-888-295-5156



Frequently Asked Questions

How does 1,1,2-trichloro-1,2,2-trifluoroethane work and how can it affect my health?

Breathing 1,1,2-trichloro-1,2,2-trifluoroethane irritates the lungs, causing coughing or shortness of breath. Exposure also causes headaches, dizziness, tiredness, or confusion. You can lose recent memory or have a convulsion.

Breathing large amounts of 1,1,2-trichloro-1,2,2-trifluoroethane results in severe shortness of breath caused by fluid building up in the lungs. Exposure to high levels may also cause an irregular heartbeat, leading to death.

Direct skin contact with liquid 1,1,2-trichloro-1,2,2-trifluoroethane causes frostbite.

How is 1,1,2-trichloro-1,2,2-trifluoroethane poisoning treated?

There is no treatment just for 1,1,2-trichloro-1,2,2-trifluoroethane poisoning. A doctor will treat the symptoms.

What should I do if exposed to 1,1,2-trichloro-1,2,2-trifluoroethane?

- **If you touch 1,1,2-trichloro-1,2,2-trifluoroethane**, place the affected body part under warm water right away.
- **If you swallow 1,1,2-trichloro-1,2,2-trifluoroethane**, get medical help right away.

What factors limit use or exposure to 1,1,2-trichloro-1,2,2-trifluoroethane?

At the end of the work shift, wash any areas of the body that contacted or possibly contacted 1,1,2-trichloro-1,2,2-trifluoroethane. Do not eat, smoke, or drink where 1,1,2-trichloro-1,2,2-trifluoroethane is handled, made, or stored. Wash hands carefully before eating, drinking, smoking, or using the toilet.

Is there a medical test to show whether I've been exposed to 1,1,2-trichloro-1,2,2-trifluoroethane?

If you have symptoms, or think you may have been exposed, physicians can order a test for an irregular heartbeat or x-ray your chest.

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Technical information for 1,1,2-trichloro-1,2,2-trifluoroethane

CAS Number: 76-13-1

Chemical Formula: C₂Cl₃F₃

Carcinogenicity (EPA): There is no carcinogenicity assessment available.

MCL (Drinking Water): There is no MCL for 1,1,2-trichloro-1,2,2-trifluoroethane.

OSHA Standards: 1,000 parts per million (ppm) or 7,600 mg/m³

NIOSH Standards: 1,000 ppm or 7,600 mg/m³ for a 10-hour, time-weighted average. The NIOSH short term exposure limit (STEL), not to be exceeded for a 15-minute period at any time is 1,250 ppm or 9,500 mg/m³.

Resources

Agency for Toxic Substances and Disease Registry (ATSDR). 2021. *Toxicological profile for 1,1,2-Trichloroethane*. Atlanta, GA: U.S. Department of Health and Human Services. <https://wwwn.cdc.gov/TSP/ToxProfiles/ToxProfiles.aspx?id=796&tid=155>

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. <https://www.cdc.gov/niosh/idlh/76131.html>

New Jersey Department of Health and Senior Services, Right to Know Hazardous Substances Fact Sheet, <http://nj.gov/health/eoh/rtkweb/documents/fs/1904.pdf>