

US EPA ARCHIVE DOCUMENT

# Consumer Factsheet on: 1,1,1-TRICHLOROETHANE

## [List of Contaminants](#)

As part of the Drinking Water and Health pages, this fact sheet is part of a larger publication:  
**National Primary Drinking Water Regulations**

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

### **What is 1,1,1-TCA and how is it used?**

1,1,1-Trichloroethane (1,1,1-TCA) is an organic liquid with a chloroform-like odor. It is largely used as a solvent removing grease from machined metal products, in textile processing and dyeing and in aerosols.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

### **Trade Names and Synonyms:**

Chloroethene  
Methylchloroform  
Aerothene TT  
Algylen  
Alpha-T  
Chlorten  
Gemalgene  
Genklene  
Dowclene  
Solvent 111  
Trichloran  
Inhibisol

### **Why is 1,1,1-TCA being Regulated?**

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for 1,1,1-TCA has been set at 0.2 parts per million (ppm) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.2 ppm because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

### **What are the Health Effects?**

Short-term: EPA has found 1,1,1-TCA to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: damage to the liver, nervous system and circulatory system.

Long-term: 1,1,1-TCA has the potential to cause the following effects from a lifetime exposure at levels above the MCL: liver, nervous system and circulatory system damage.

### **How much 1,1,1-TCA is produced and released to the environment?**

Demand for 1,1,1-trichloroethane was 705 million lbs. in 1989. 1,1,1-TCA is likely to enter the environment by evaporation or in wastewater from its production or use in metal cleaning. It can also enter the environment in leachates and volatile emissions from landfills.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, releases to water and land totalled over 1 million lbs. These releases were primarily from metal fabrication industries. The largest releases occurred in California and Georgia. The largest direct releases to water occurred in Utah and Indiana.

### **What happens to 1,1,1-TCA when it is released to the environment?**

1,1,1-TCA will evaporate rapidly from water and soil. It does not bind to soils nor is it broken down by microbial action, so it may leach to ground water. It has little tendency to accumulate in aquatic life.

### **How will 1,1,1-TCA be Detected in and Removed from My Drinking Water?**

The regulation for 1,1,1-TCA became effective in 1989. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if 1,1,1-TCA is present above 0.5 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of 1,1,1-TCA so that it is consistently below that level. The following treatment methods have been approved by EPA for removing 1,1,1-TCA: Granular activated charcoal in combination with Packed Tower Aeration.

### **How will I know if 1,1,1-TCA is in my drinking water?**

If the levels of 1,1,1-TCA exceed the MCL, 0.2 ppm, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

### **Drinking Water Standards:**

Mclg: 0.2 ppm

Mcl: 0.2 ppm

**1,1,1-TCA Releases to Water and Land, 1987 to 1993 (in pounds):**

	<b>Water</b>	<b>Land</b>
<b>TOTALS (in pounds)</b>	<b>222,403</b>	<b>812,873</b>
<b>Top Six States*</b>		
CA	109,070	
GA	73,258	
AR	67,000	
IN	46,096	
VA	51,822	
UT	40,000	
<b>Major Industries</b>		
Gray iron foundries	1,084	76,158
Aircraft	546	73,258
Manufacturing industries	1,018	72,572
Wood furniture	0	53,038
Fabricated structural metal	0	51,425
Plating, polishing	6,152	41,647
Turbines, generators	40,317	966

\* State totals only include facilities with releases greater than 10,000 lbs.

**Learn more about your drinking water!**

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone books government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call: EPAs Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the: Community Right-to-Know Hotline: (800) 424-9346.