Consumer Factsheet on: 1,2-DICHLOROPROPANE

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 1,2-DCP and how is it used?

1,2-Dichloropropane (1,2-DCP) is a colorless organic liquid with a chloroform-like odor. The greatest use of 1,2-dichloropropane is in making other organic chemicals. It is also used in making lead-free gasoline, paper coating, soil fumigant for nematodes, and insecticide for stored grain.

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:

Propylene dichloride
Nematox
Vidden D
Dowfume EB-5

Why is 1,2-DCP 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 1,2-DCP has been set at zero 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 5 parts per billion (ppb) 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 1,2-DCP 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, kidneys, adrenal glands, bladder, and the gastrointestinal and respiratory tracts.

Long-term: 1,2-DCP has the potential to cause the following effects from a lifetime exposure at levels above the MCL: the liver, kidneys, bladder, gastrointestinal tract and the respiratory tract; cancer.

How much 1,2-DCP is produced and released to the environment?

Production of 1,2-DCP has decreased greatly since a 1980 report of 77 million lbs. Dow Chemical, the only listed producer, discontinued its production in 1991. It may be released into the atmosphere or in wastewater during its production or use as an intermediate in chemical manufacture. There were also significant releases during its former use as a soil fumigant. It may also leach from municipal landfills.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, 1,2-dichloropropane releases to land and water totalled nearly 104,000 lbs. These releases were primarily from chemical industries. The largest releases occurred in New York.

What happens to 1,2-DCP when it is released to the environment?

1,2-DCP released to soil will largely evaporate. However, it has been detected in groundwater. Releases to surface water will also evaporate, and are not likely to accumulate in aquatic life.

How will 1,2-DCP be Detected in and Removed from My Drinking Water?

The regulation for 1,2-DCP became effective in 1992. 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 1,2-DCP 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 1,2-DCP so that it is consistently below that level. The following treatment methods have been approved by EPA for removing 1,2-DCP: Granular activated charcoal in combination with Packed Tower Aeration.

How will I know if 1,2-DCP is in my drinking water?

If the levels of 1,2-DCP exceed the MCL, 5 ppb, 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: zero

Mcl: 5 ppm

1,2-DCP Releases to Water and Land, 1987 to 1993 (in pounds):

	Water	**Land**
TOTALS (in pounds)	**98,504**	**5,470**
Top Five States		
NY	30,000	3,205
LA	25,586	260
VA	14,629	250
TX	12,290	1,206
NJ	10,463	0
Major Industries		
Alkalies, chlorine	37,297	1,216

Photographic equip.	30,000	3,205
Gum, wood chemicals	14,629	250
Plastics, resins	10,463	0
Misc. Indust. Organics	4,793	250

* Water/Land totals only include facilities with releases greater than a certain amount - usually 1000 to 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.