Consumer Factsheet on: DICHLOROMETHANE

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 DCM and how is it used?

Dichloromethane (DCM) is a colorless organic liquid with a sweet, chloroform-like odor. The greatest use of DCM is as a paint remover. Other uses include: solvent and cleaning agent in a variety of industries, a fumigant for strawberries and grains; and to extract substances from foodstuffs.

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

Trade Names and Synonyms:

DCM
Methylene chloride

Why is DCM 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 dichloromethane 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 dichloromethane 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 nervous system and to blood.

Long-term: Dichloromethane has the potential to cause the following effects from a lifetime exposure at levels above the MCL: liver damage; cancer.

How much DCM is produced and released to the environment?

Production of DCM has been decreasing: from a high of 561 million lbs. in 1986, to roughly 410 million lbs. in 1993. It is released in wastewater primarily from the following industries: Paint and ink, aluminum forming, coal mining, photographic equipment and supplies, pharmaceutical, organic chemical/plastics, metal foundries and laundries. DCM is also formed during the chlorination of water.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, DCM releases to land and water totalled over 2.1 million lbs. These releases were primarily from medicinals and botanicals industries. The largest releases occurred in Connecticut and New York.

What happens to DCM when it is released to the environment?

Most DCM is released to air where it is degraded by sunlight within a few months. Releases to water evaporate very quickly. It will evaporate from soil but can also leach through soil to ground water. DCM is not likely to accumulate in aquatic life.

How will DCM be Detected in and Removed from My Drinking Water?

The regulation for dichloromethane became effective in 1994. 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 dichloromethane 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 dichloromethane so that it is consistently below that level. The following treatment methods have been approved by EPA for removing dichloromethane: Granular activated charcoal in combination with Packed Tower Aeration.

How will I know if DCM is in my drinking water?

If the levels of dichloromethane 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 ppb

DCM Releases to Water and Land, 1987 to 1993 (in pounds):

	Water	**Land**
TOTALS (in pounds)	**1,544,694**	**556,830**
Top Ten States*		
CT	940,158	0
NY	58,400	155,755
GA	166,700	0
NJ	138,302	2,721
WI	0	139,920

SC	20,860	52,810	
MI	39,575	32,900	
KS	0	33,489	
MO	0	27,295	
TX	15,910	823	
Major Industries*			
Medicinals, botanicals		1,106,858	0
Photographic supplies		58,400	155,755
Misc Indust. organics		141,942	53,741
Custom plastics, resins		0	139,920
Pharmaceuticals		37,575	0
Potato/corn chips&snacks		2,000	32,900
Air conditioning/heating		0	33,489
Steel pipe, tubing		0	27,295

* 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.