Consumer Factsheet on: HEPTACHLOR AND HEPTACHLOR EPOXIDE

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 Heptachlor and how is it used?

Heptachlor is a white to tan waxy organic solid with a camphor-like odor. The epoxide is formed from heptachlor in the environment. It was once used as a non-agricultural insecticide. Most uses of the product were canceled in 1978. The only permitted commercial use of heptachlor products is for fire ant control in buried, pad-mounted electric power transformers, and in underground cable television and telephone cable boxes.

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:

Aahepta
Agroceres
Hepta
Heptachlordane
Heptagran
Heptamul
Heptox
Gold Crest H-60
Rhodiachlor
Velsicol 104
Basaklor
Soleptax
Termide

Why is Heptachlor 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 MCLGs for heptachlor and its epoxide have been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on these MCLGs, EPA has set enforceable standards called Maximum Contaminant Levels (MCLs). 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 for heptachlor has been set at 0.4 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. The MCL for the epoxide is 0.2 ppb.

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 heptachlor and its epoxide to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: liver and central nervous system damage.

Long-term: Heptachlor and its epoxide have the potential to cause the following effects from a lifetime exposure at levels above the MCL: extensive liver damage; cancer.

How much Heptachlor is produced and released to the environment?

Heptachlor may be released directly to the soil in connection with its use in termite and fire ant control. However, heptachlor has been found in treated wastewater from some types of industrial facilities. Production of heptachlor in 1982 was nearly 100,000 lbs.

Heptachlor epoxide is not produced commercially, but rather is formed by the chemical and biological transformation of heptachlor in the environment.

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

Heptachlor can evaporate from soil surfaces, and is degraded by bacteria once it passes into the soil. Heptachlor is expected to adsorb strongly to soil and so resist leaching to groundwater.

Heptachlor epoxide also adsorbs strongly to soil but is extremely resistant to biodegradation, persisting for many years in the upper soil layers. Similarly in water, heptachlor will be broken down while the epoxide will persist, usually in sediments.

Heptachlor epoxide is concentrated extensively in aquatic life. It is taken up into the food chain by plants and bioconcentrates into fish, animals and milk.

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

The regulation for heptachlor 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 heptachlor is present above 0.04 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 heptachlor so that it is consistently below that level. The following treatment methods have been approved by EPA for removing heptachlor: Granular activated charcoal.

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

If the levels of heptachlor exceed the MCL, 0.4 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:

Mcl

Heptachlor- 0.4 ppb

Heptachlor epoxide- 0.2 ppb

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 book's 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: EPA's 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