Consumer Factsheet on: CHLORDANE

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 Chlordane and how is it used?

Chlordane is a viscous liquid, colorless to amber, with a slight chlorine-like aromatic odor. It was used on corn, citrus, deciduous fruits and nuts, vegetables; for home, garden and ornamentals; lawns, turf, ditchbanks and roadsides. It was applied directly to soil or foliage to control a variety of insect pests including parasitic roundworms and other nematodes, termites, cutworms, chiggers, leafhoppers. The only commercial use of chlordane products still permitted is for fire ant control in power transformers.

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:

Velsicol 1068
Aspon-chlordane
Belt
Chlorindan
Chlor-Kil
Cortilan-Neu
Dowchlor
Oktachlor
Oktaterr
Synklor
Tat Chlor 4
Topiclor
Toxichlor
Intox 8
Gold Crest C-100
Kilex
Kypchlor
Niran
Termi-Ded
Prentox
Pentiklor

Why is Chlordane 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 chlordane 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 2 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 chlordane to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: central nervous system effects - including irritability, excess salivation, labored breathing, tremors, convulsions, deep depression - and blood system effects such as anemia and certain types of leukemia.

Long-term: Chlordane has the potential to cause the following effects from a lifetime exposure at levels above the MCL: damage to liver, kidneys, heart, lungs, spleen and adrenal glands; cancer.

How much Chlordane is produced and released to the environment?

Chlordane has been released into the environment primarily from its application as an insecticide. The amount of chlordane used annually in the US prior to 1983 was estimated in 1985 to be greater that 3.6 million pounds. As of April 14, 1988, however, all commercial use of chlordane in the US has been canceled.

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

Chlordane may persist for long periods of time in air, soil and water. Though chlordane tends to adhere to soil, its detection in various groundwaters in NJ and elsewhere indicates that it can leach to groundwater. It is only very slowly broken down by microbes. Chlordane has been detected in air samples in remote areas such as over the Pacific and Atlantic Oceans, and in the Arctic.

Chlordane has a great tendency to accumulate in aquatic organisms, but there is evidence that this is reversible once exposure is stopped.

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

The regulation for chlordane 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 chlordane is present above 0.2 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 chlordane so that it is consistently below that level. The following treatment methods have been approved by EPA for removing chlordane: granular activated charcoal.

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

If the levels of chlordane exceed the MCL, 2 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: 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