

US EPA ARCHIVE DOCUMENT

Consumer Factsheet on: HEXACHLOROCYCLOPENTADIENE

[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 HEX and how is it used?

Hexachlorocyclopentadiene (HEX) is an oily, yellow-green organic liquid with a pungent odor. Its greatest use is as a raw material in manufacturing other chemicals, including pesticides, flame retardants, resins, dyes, pharmaceuticals, plastics, etc. HEX has no end uses of its own.

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:

HEX
Hexachloropentadiene

Why is HEX 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 HEX has been set at 50 parts per billion (ppb) 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 50 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 HEX to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: gastrointestinal distress; damage to liver, kidneys and heart.

Long-term: HEX has the potential to cause the following effects from a lifetime exposure at levels above the MCL: damage to the stomach and kidneys.

How much HEX is produced and released to the environment?

It has been estimated that between 8 and 15 million lbs. of HEX are produced each year. Major sources of its release are emissions and contaminated wastewater from facilities which manufacture or use this compound as a chemical intermediate, and from the application of pesticides where it may remain as an impurity. From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, HEX releases to land and water totalled only 78 lbs., all of which was to water. These releases were primarily from alkalis and chlorine industries. The largest releases occurred in New York.

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

HEX is not a persistent environmental contaminant. If released to soil, it is likely to adhere to soil where it will be degraded by microbes. In water it evaporates quickly and is attacked by sunlight and other reactive chemicals. Its tendency to accumulate in aquatic life varies greatly from one species to another.

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

The regulation for HEX 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 HEX 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 HEX so that it is consistently below that level. The following treatment methods have been approved by EPA for removing HEX: Granular activated charcoal combined with Packed tower aeration.

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

If the levels of HEX exceed the MCL, 50 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: 50 ppb

Mcl: 50 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