

Consumer Factsheet on: ADIPATE, (2-DIETHYLHEXYL)

[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 Adipate and how is it used?

Adipate is a light-colored, oily liquid with an aromatic odor. It is used in making plastics. It is also used as a solvent; in aircraft lubricants; as a hydraulic fluid; as a plasticizer or solvent in the following cosmetics: bath oils, eye shadow, cologne, foundations, rouge, blusher, nail-polish remover, moisturizers and indoor tanning preparations; in meat wrapping operations.

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:

Adipol 2EH
Bisoflex DOA
Effomoll DOA
Kodiflex DOA
Monoplex DOA
Plastomoll DOA
Sicol 250
Truflex DOA
Vestinol OA
Wickenol 158
Witamol 320
Ergoplast AdDO
Kemester 5652
Reomol DOA
Rucoflex DOA
Staflex DOA

Why is Adipate 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 adipate has been set at 0.4 parts per million (ppm) 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 0.4 ppm 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: Adipate is not known to cause any health problems when people are exposed to it at levels above the MCL for relatively short periods of time.

Long-term: Adipate has the potential to cause the following effects from a lifetime exposure at levels above the MCL: reduced body weight and bone mass; damage to liver and testes; cancer.

How much Adipate is produced and released to the environment?

Adipate is released in fly ash from municipal waste incineration, wastewater effluent from sewage treatment plants and chemical manufacturing plants. Since adipates are known to leach from plumbing made of PVC plastic, they have been recognized as a potential drinking water contaminant.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, adipate releases to land and water totalled over 450,000 lbs. These releases were primarily from gray and ductile iron foundries. The largest releases occurred in Ohio and Indiana.

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

If released to soil or water, adipate is expected to be broken down by microbes. It will adhere to sediments in water bodies and will not leach through soil to ground water. Adipate does not tend to accumulate or persist in fish but may it may become concentrated in other aquatic organisms that are unable to metabolize adipate.

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

The regulation for adipate 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 adipate is present above 0.6 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 adipate so that it is consistently below that level. The following treatment methods have been approved by EPA for removing adipate: Granular activated charcoal.

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

If the levels of adipate exceed the MCL, 0.4 ppm, 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: 0.4 ppm

Mcl: 0.4 ppm

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

TOTALS (in pounds)	Water 27,471	Land 425,230
Top Five States *		
OH	531	173,900
IN	5,500	93,275
VA	1,886	46,102
TN	18,480	26,409
MI	250	29,750
Major Industries*		
Gray iron foundries		316,438
Aluminum foundries		50,409
Rubber, plastic hose/belts		32,078
Space propulsion units		20,363
Misc Indust. organics		11,996

* 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