

US EPA ARCHIVE DOCUMENT

Consumer Factsheet on: ETHYLBENZENE

[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 Ethylbenzene and how is it used?

Ethylbenzene is a colorless organic liquid with a sweet, gasoline-like odor. The greatest use - over 99 percent - of ethylbenzene is to make styrene, another organic liquid used as a building block for many plastics. It is also used as a solvent for coatings, and in making rubber and plastic wrap.

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:

Ethylbenzol
Phenylethane

Why is Ethylbenzene 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 ethylbenzene has been set at 0.7 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 also been set at 0.7 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: EPA has found ethylbenzene to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: drowsiness, fatigue, headache and mild eye and respiratory irritation.

Long-term: Ethylbenzene has the potential to cause the following effects from a lifetime exposure at levels above the MCL: damage to the liver, kidneys, central nervous system and eyes.

How much Ethylbenzene is produced and released to the environment?

Production of ethylbenzene has increased: from 6.9 billion lbs. in 1982 to 11.8 billion lbs in 1993. It is released to the air primarily from its use in gasoline. More localized may be due to waste water and spills from its production and industrial use.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, ethylbenzene releases to water and land totalled over 761,000 lbs. These releases were primarily from petroleum refining industries. The largest releases occurred in Texas. The largest direct releases to water occurred in Virginia.

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

Ethylbenzene will evaporate rapidly from water, and will be degraded by microbes. It binds only moderately to aquatic sediment and to soils. Thus, it may leach to ground water if released to land. Ethylbenzene has little potential for accumulating in aquatic life.

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

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

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

If the levels of ethylbenzene exceed the MCL, 0.7 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: 0.7 ppm

Mcl: 0.7 ppm

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

		Water	Land
TOTALS (in pounds)		47,293	714,580
Top Ten States			
TX	9,870	480,164	
VI	1,233	72,245	
IL	31	44,789	
PR	0	23,980	
VA	17,997	1,950	

DE	3,460	13,324	
NJ	1,892	11,510	
NM	0	13,076	
WY	250	12,755	
LA	4,383	4,552	
Major Industries			
Petroleum refining		55,201	718,884
Plastics, resins		12,384	9,212
Indust. Organics		10,683	9,781
Pharmaceuticals		14,090	0
Metal containers		0	11,510

* 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.