

# Oregon Department of Human Services

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## TECHNICAL BULLETIN

## HEALTH EFFECTS INFORMATION

Prepared by:

ENVIRONMENTAL TOXICOLOGY SECTION

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**TOLUENE**

**For More Information Contact:**

**Environmental Toxicology Section  
(971) 673-0440**

**Drinking Water Section  
(971) 673-0405**

## **TOLUENE**

Toluene is a volatile organic chemical used extensively in industry as a natural component of gasoline. Toluene occurs naturally as a component of many petroleum products, and is also produced indirectly in large volumes during gasoline refining. Toluene is used as a solvent for paints, coatings, gums, oils, and resins. Toluene is also used as a raw material in the production of benzene and other organic solvents.

### **OCCURRENCE OF TOLUENE IN WATER SUPPLIES**

Most of waste toluene is released into the air. If it is released into the surface waters, such as lakes and streams, it is rapidly transferred to the air. Toluene released on land can enter under groundwater supplies where it can remain for months or years. Although regular sampling of public water supplies is just beginning, past surveys have shown that about 1% of public water supplies using well water around the country contain toluene at levels of 0.005 milligrams per liter (mg/L) or higher.

### **HEALTH EFFECTS OF DRINKING TOLUENE CONTAMINATED WATER**

The United States Environmental Protection Agency (US EPA) has set a maximum allowable level of 1 mg/L for toluene in public water supplies. There are no known short-term or immediate illness symptoms due to exposure at these levels. Toluene has not been shown to cause cancer in laboratory animal studies, has not been shown to cause cancer in humans, and carcinogenic risk has not been classified by the US EPA. Exposure to toluene at levels of 200 mg/L for 8 hours can cause symptoms indicating central nervous system toxicity as well as dermatitis, respiratory irritation, nausea and vomiting. Repeated or long-term exposure to such levels results in liver and kidney damage.

### **WHAT TO DO ABOUT TOLUENE CONTAMINATION**

Although a maximum contaminant level has been set for toluene which is very protective of public health, the Department of Human Services recommends that exposure to toluene be kept as low as possible. To accomplish this, water suppliers and other affected persons can take a variety of actions, including closing contaminated wells, finding other supplies or installing treatment systems at contaminated wells.

Persons whose supplies exceed the limit or who do not wish to consume even smaller amounts of toluene can take several actions for short-term protection, such as using bottled water, or using in-home treatment devices to treat well water for drinking and cooking purposes. Those deciding to obtain home treatment systems are encouraged to contact the Department of Human Services for information on selecting appropriate equipment.

**For More Information** on toluene, contact the Drinking Water Section of the Department of Human Services at 971-673-0405.