

Oregon Department of Human Services

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TECHNICAL BULLETIN

HEALTH EFFECTS INFORMATION

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ENVIRONMENTAL TOXICOLOGY SECTION
Office of Environmental Public Health
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(CCL)₄
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For More Information Contact:

Environmental Toxicology Section
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CCl₄

CCl₄ is an organic chemical used extensively in industry as a solvent and in the manufacture of paints and plastics. It is a synthetic, or man-made, chemical with no natural sources. CCl₄ is used in many industrial operations such as metal cleaning and degreasing, in the production of chlorofluorocarbons, which are used as refrigerants, foam-blowing agents, and solvents, and is also used in fumigants. CCl₄ releases can occur in almost any industrial setting.

OCCURRENCE OF CCl₄ IN WATER SUPPLIES

Most CCl₄ is released into the air. CCl₄ which is released into surface waters such as lakes and streams is transferred to the air in a few days or weeks. CCl₄ released on land can enter underground water supplies where it can remain for months or years. Although regular sampling of public water supplies is just beginning, estimates are that less than 1% of public water supplies using well water around the country contain CCl₄ at levels of 0.0005 milligrams per liter (mg/L) or higher.

HEALTH EFFECTS OF DRINKING CCl₄ CONTAMINATED WATER

The United States Environmental Protection Agency (EPA) has set a maximum allowable level of 0.005 mg/L for CCl₄ in public water supplies. There are no known short-term or immediate illness symptoms due to exposure at these levels. CCl₄ has been shown to cause cancer in laboratory animal studies. CCl₄ has not been shown to cause cancer in humans.

CANCER RISK

Because CCl₄ has been shown to cause cancer in laboratory animal studies, it is considered to be a "probable human carcinogen" by the EPA. The estimated cancer risk from consuming water with CCl₄ at the maximum allowable level of 0.005 mg/L is very small. EPA estimates that lifetime exposure to this chemical at a level of 0.003 mg/L would result in one additional cancer case out of 100,000 people exposed, assuming they drink typical amounts of water each day.

WHAT TO DO ABOUT CCl₄ CONTAMINATION

Although a maximum allowable level has been set for CCl₄ which is very protective of public health, the Department of Human Services recommends that exposure to CCl₄ be kept as low as possible. To accomplish this, public 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 consisting of granular activated carbon filtration or aeration.

People whose supplies exceed the limit or who do not wish to consume even smaller amounts of CCl₄ can take several actions for short-term protection including boiling, using bottled water, or using in-home treatment devices to treat water used for drinking and cooking. Those who want to obtain home treatment systems are encouraged to contact the Department of Human Services for information on selecting this type of equipment.

For More Information on CCl₄, contact the Drinking Water Section at 971-673-0405.