

Oregon Department of Human Services

Office of Environmental Public Health
800 NE Oregon Street #604
Portland, OR 97232-2162

(503) 731-4030 Emergency
(971) 673-0405
(971) 673-0457 FAX
(971) 673-0372 TTY-Nonvoice

TECHNICAL BULLETIN

HEALTH EFFECTS INFORMATION

Prepared by:
Department of Human Services
ENVIRONMENTAL TOXICOLOGY SECTION
Office of Environmental Public Health
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(1,1- DCE)
Dichloroethylene

For More Information Contact:

Environmental Toxicology Section
(971) 673-0440

Drinking Water Section
(971) 673-0405

1,1- Dichloroethylene

1,1- DCE is an organic chemical used extensively in the manufacture of plastic products. It is a synthetic, or man-made chemical with no known natural sources. 1,1- DCE and vinyl chloride are used in the manufacturing of plastic food wrap. 1,1- DCE releases occur during its production and during its use in manufacture of other materials.

OCCURRENCE OF 1,1- DCE IN WATER SUPPLIES

Most 1,1- DCE is released into the air. 1,1- DCE which is released into surface waters such as lakes and streams can be expected to rapidly transfer to the air. 1,1- DCE released on land can enter under ground water where it can remain for months or years. Although regular sampling of public water supplies is just beginning, and we do not have extensive data, 1,1- DCE is not expected to be a common contaminant of public water supplies using well water. It has been found to occur in some well water with trichloroethylene, tetrachloroethylene, and their breakdown products.

HEALTH EFFECTS OF DRINKING 1,1- DCE CONTAMINATED WATER

The United States Environmental Protection Agency (EPA) has set a maximum allowable level of 0.007 milligrams per liter (mg/L) for 1,1- DCE in public water supplies. There are no known short-term or immediate illness symptoms due to exposure at these levels. There is limited evidence that 1,1- DCE causes cancer in some laboratory animal studies. 1,1- DCE has not been shown to cause cancer in humans.

CANCER RISK

Because there is limited evidence that 1,1- DCE causes cancer in some laboratory animal studies, it is considered a "possible human carcinogen" by the EPA. The estimated cancer risk from consuming water with 1,1- DCE at the maximum allowable level of 0.007 mg/L is very small. EPA estimates that lifetime exposure to this chemical at a level of 0.0023 mg/L would result in one additional cancer case out of 100,000 people exposed, drinking typical amounts of water each day.

WHAT TO DO ABOUT 1,1- DCE CONTAMINATION

Although the maximum allowable level set for 1,1- DCE is very protective of

public health, the Department of Human Services recommends that exposure to 1,1- DCE be kept as low as possible. To accomplish this, public water suppliers or 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 1,1- DCE can take several actions for short-term protection including 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 1,1- DCE contact the Drinking Water Section at (971) 673-0405.