

1,1-Dichloroethylene (C₂H₂Cl₂)

What is 1,1-Dichloroethylene?

1,1-Dichloroethylene is an industrial chemical that is not found naturally in the environment. It is a colorless liquid with a mild, sweet smell. 1,1-DCE is used to make certain plastics, such as flexible films like food wrap, and packaging material. It is also used to make flame retardant coatings for fiber and carpet backings, coating for steel pipes, and in adhesive applications.

Does 1,1-Dichloroethylene have any additional names?

(1,1-DCE); 1,1-Dichloroethene; Vinylidene Chloride

What are the known health effects?

The main effect from breathing high levels of 1,1-DCE is on the central nervous system. Breathing lower levels of 1,1-DCE in air for a long time may damage your nervous system, liver, and lungs. Animals that ingested high levels of 1,1-DCE had damaged livers, kidneys, and lungs.

The EPA has determined that 1,1-DCE is a possible human carcinogen.

How does exposure occur?

Exposure may occur by working in industries that make or use 1,1-DCE (although most are in Texas and Louisiana). Food that is wrapped in plastic wrap may contain very low levels of 1,1-DCE. A small percentage (3%) of drinking water supplies may contain very low levels of 1,1-DCE.

Is this contaminant regulated?

Yes, and water supplied to customers of Mount Laurel MUA is in compliance with USEPA and NJDEP requirements. The maximum concentration of 1,1-Dichloroethylene permitted in drinking water is 2 ppb; 1,1-Dichloroethylene is not currently detected in water supplied to MLTMUA customers.

How can I reduce exposure?

Reverse osmosis and granular activated carbon filtration are treatment options to remove 1,1-Dichloroethylene from drinking water.

Additional information for 1,1-Dichloroethylene, including the information referenced, can be found at:

https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/0039tr.pdf

https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0039_summary.pdf