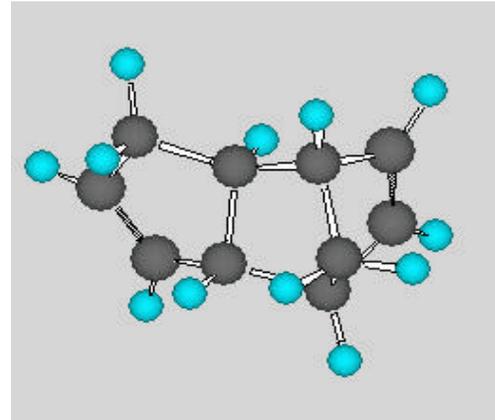


Environmental Health Information

Dicyclopentadiene

Also known as: Cyclopentadiene dimer
Chemical reference number (CAS): 77-73-6



What is Dicyclopentadiene?

Dicyclopentadiene (DCPD) is a man-made substance produced from crude oil products. It is a colorless, waxy, flammable solid or liquid, with a camphor-like odor. Dicyclopentadiene is not commonly found in products used in homes. It is used as a chemical building block in the manufacture of some paints, varnishes, plastics and pesticide products.

Most DCPD found in the environment is from industrial processes or from improper waste disposal. While DCPD in air can break down in a matter of hours, it may remain unchanged in soil and water for a long time.

How are people exposed to Dicyclopentadiene?

People may be exposed to DCPD in the workplace where it is a part of an industrial process or when the chemical is released into the environment.

- **Drinking/Eating:** People may be exposed by drinking contaminated water, although DCPD's strong odor in water would discourage people from drinking it. People who handle contaminated soil may be exposed when they eat, or when they touch their mouths with dirty hands.
- **Touching:** People may be exposed if they handle the chemical, or contaminated soil or water. Although the chemical may irritate the skin, it does not easily pass through the skin.
- **Breathing:** If DCPD is in the air, people may breathe it in. If DCPD is in water, it can pass into the air and people could inhale the chemical while washing, bathing or cooking.

Why are we concerned about exposure to Dicyclopentadiene?

We know very little about the health effects of short-term exposures to DCPD. Because of this lack of information, we want to be very cautious. While the few animal studies done have not shown DCPD to be highly toxic, these studies do not tell us enough about how DCPD affects people's health. Until we know more, the amounts people are exposed to should be minimized.

What are possible health effects from exposure to Dicyclopentadiene?

The following symptoms may occur immediately or soon after short term exposure to DCPD in air: headache, dizziness and nausea, irritation of eyes, nose, and throat. Kidney, liver, and lung damage as well as nervous system effects occurred in animal studies after exposure to moderate amounts over a long period of time. One case of human contact dermatitis in an occupational setting has been reported.

Dicyclopentadiene is an odorous organic chemical. Most people can smell DCPD in the air when levels reach 10 - 60 micrograms/ cubic meter ($\mu\text{g}/\text{m}^3$). Even at relatively low concentrations, individuals can find its odor very disagreeable. In addition, exposure of the general public to odorous levels of DCPD often leads to complaints about dizziness, headaches and nausea. Low concentrations of DCPD in water can also lead to complaints about bad smells and taste. DCPD is detectable by the human nose as it escapes from water into air at very low concentrations.

Are there community health standards for Dicyclopentadiene?

Minnesota Department of Health (MDH) standards are intended to protect the public, including sensitive people (such as children and the elderly), from exposures that may result in adverse health effects. Because of the limited amount of information available on the possible health effects of DCPD, there are few standards available for regulating its use.

- **Water:** Currently there are no state or federal drinking water standards for DCPD. But because people can smell it when it is present in water in extremely small amounts (10-25 nanograms per liter [ng/L]), it is unlikely that people will drink water containing hazardous levels of this chemical.
- **Air:** The Minnesota Department of Health has adopted a sub-chronic Health Risk Value (HRV) for DCPD of 3 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). A sub-chronic HRV is an average amount of chemical in the air over a period of weeks to months that is thought to be unlikely to have harmful health effects. Currently, MDH does not have a health standard for peak emissions of less than one hour. Peak concentrations can occur when emissions from industrial operations vary over the production process. When this happens, measuring the average amount over a longer period of time gives no information about higher peaks of emissions. Health effects may be associated with exposure to low levels for a long time or peak levels for a short time.

Health criteria are not available for short-term air exposures. The Minnesota Pollution Control Agency (MPCA) regulates the amount of chemicals that can be released by industries into air. In regulating air emissions, peak levels should be considered. Releases into surface waters and soils are also regulated by the MPCA. Regional or local environmental agencies typically regulate chemical releases to regional or municipal sewers.

Can a medical test tell if I have been exposed to Dicyclopentadiene?

Seek medical advice if you have any symptoms that you think may be related to chemical exposure. While doctors may be able to treat symptoms and any possible health effects related to chemical exposures, it may not be possible to determine the cause of health problems or if you have been exposed to toxic chemicals.

This fact sheet summarizes information about DCPD, but is not intended to include a complete listing of all possible effects. In addition, it does not refer to work exposure or emergency situations.

For more information contact: MDH/Site Assessment and Consultation: (651) 215-0916 or (800) 627-3529, press "4." To request this document in another format, call 651/215-0700, TDD: 651/ 215-8980, or the Minnesota Relay Service at 651/297-5353 or Toll Free 1-800/627-3529

This information sheet was prepared in cooperation with the U.S. Agency for Toxic Substances and Disease Registry.