

# 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  
DRINKING WATER PROGRAM  
Office of Environmental Public Health

May 2006

**PENTACHLOROPHENOL**

**For More Information Contact:**

Environmental Toxicology Section  
(971) 673-0429

Drinking Water Section  
(971) 673-0405

## **SYNONYMS**

Penta Ready, PCP, Dowicide 7, EP 30, Permasan, Pentachlorol, Liroprem, Fungifen, Chlon, Woodtreat, Lauxtol, Ortho Triox, Santophen 20, Forpen-50

## **USES OF PENTACHLOROPHENOL**

Pentachlorophenol was and is used extensively as a pesticide and wood preservative. Since 1984, pentachlorophenol has been restricted to certified applicators and can no longer be purchased by the general public. The main uses of pentachlorophenol include application as a preservative to railway ties, utility poles and wharf pilings.

Pentachlorophenol does not occur naturally. Exposure to pentachlorophenol is usually with the impure or technical grade formulation, which is gray or brown in color. It has a pungent, benzene-like odor, when heated. Pentachlorophenol occurs in dust, flakes or beads and is soluble in water.

## **WHAT HAPPENS TO PENTACHLOROPHENOL IN THE ENVIRONMENT?**

Pentachlorophenol can be found in the air, water and soil. Sunlight and microorganisms will break down pentachlorophenol within a few days to months. It can persist for much longer in groundwater environments. Some low levels of pentachlorophenol are found in fish, wildlife and food products. The United States Environmental Protection Agency (USEPA) has established a maximum contaminant level (MCL) of 0.001 mg/L (or one part per billion) for pentachlorophenol in public drinking water supplies.

## **HOW CAN PENTACHLOROPHENOL AFFECT MY HEALTH?**

Studies in workers show that exposure to high levels of pentachlorophenol can cause the body to produce excess heat and subsequent fever, sweating and difficult breathing. If body temperatures are elevated too high or over long periods of time, organ and tissue damage can result. These effects are highly unlikely as a result of exposure to low levels of pentachlorophenol found in drinking water. Chronic exposure, even to low levels of contamination, can lead to liver damage and immune system effects. Some of these effects may also be the result of other chemicals present in technical or impure grade pentachlorophenol as well.

## **WHAT IS THE CANCER RISK?**

Studies are mixed on whether or not pentachlorophenol caused cancer in workers who experienced regular or repeated exposures in the workplace. Animals exposed to high doses of pentachlorophenol had increases in liver, endocrine and nasal tumors. EPA considers pentachlorophenol to be a probable human carcinogen.

### **CAN PENTACHLOROPHENOL BE REMOVED FROM WATER?**

The USEPA recommends that granular activated charcoal be used for removal of pentachlorophenol from drinking water systems that exceed the MCL of 0.001 mg/L (or parts per million).

Treatment systems require careful design, sampling and maintenance to ensure effectiveness. If a treatment system is considered, the National Sanitation Foundation (NSF) should certify it. Those who wish to obtain a home treatment system are encouraged to contact the Office of Environmental Public Health for information on equipment and maintenance.