Consumer Factsheet on: ORTHO-DICHLOROBENZENE (o-DCB)

List of Contaminants

As part of the Drinking Water and Health pages, this fact sheet is part of a larger publication:
National Primary Drinking Water Regulations

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

What is o-DCB and how is it used?

Ortho-dichlorobenzene, (o-DCB) is a colorless organic liquid with a pleasant, aromatic odor. The greatest use of o-dichlorobenzene is as a chemical intermediate for making agricultural chemicals, primarily herbicides. Other present and past uses include: solvent for waxes, gums, resins, wood preservatives, paints; insecticide for termites and borers; in making dyes; as a coolant, deodorizer, degreaser.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Trade Names and Synonyms:

ortho-Dichlorobenzol
Dilantin
Dowtherm E
Chloroben
Dilatin DB

Why is o-DCB being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for o-DCB has been set at 0.6 parts per million (ppm) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.6 ppm because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

What are the Health Effects?

Short-term: o-DCB is not known to cause any health problems when people are exposed to it at levels above the MCL for relatively short periods of time.

Long-term: o-DCB has the potential to cause the following effects from a lifetime exposure at levels above the MCL: damage to the nervous system, liver, kidneys and blood cells.

How much o-DCB is produced and released to the environment?

Production of o-DCB was estimated at 43 million lbs. in 1991. Its use in manufacturing and solvents may be significant sources of discharges into water. Dichlorobenzenes also enter water systems from the use of o-DCB as a deodorant in industrial wastewater treatment. Chemical waste dump leachates and industrial wastewater are the major source of pollution of dichlorobenzenes to Lake Ontario.

From 1987 to 1993, according to the Toxic Release Inventory, o-DCB releases to land and water totalled 248 million lbs., mostly to land. These releases were primarily form organic chemical manufacturing industries. The largest releases occurred in New Jersey.

What happens to o-DCB when it is released to the environment?

If released to soil, o-DCB can bind to soil particles. However, its detection in groundwater indicates that leaching can occur. It will evaporate from soil or surface water and will be broken down by microbes. o-DCB is likely to accumulate in fish and other aquatic life.

How will o-DCB be Detected in and Removed from My Drinking Water?

The regulation for o-DCB became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if o-DCB is present above 0.5 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of o-DCB so that it is consistently below that level. The following treatment methods have been approved by EPA for removing o-DCB: Granular activated charcoal in combination with Packed Tower Aeration.

How will I know if o-DCB is in my drinking water?

If the levels of o-DCB exceed the MCL, 0.6 ppm, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Drinking Water Standards:

Mclg: 0.6 ppm

Mcl: 0.6 ppm

o-DCB Releases to Water and Land, 1987 to 1993 (in pounds):

		Water	Land
TOTALS (in pounds)		**75,967**	**171,663**
Top Five States *			
NJ	19,602	165,661	

WV	39,653	0	
OR	7,260	0	
SC	1,502	4,628	
TX	1,418	1,000	
Major Industries			
Industrial Organics		15,416	98,092
Cyclic crudes, dyes		7,639	67,418
Alkalis, chlorine		38,029	0
Paper mills		7,260	0
Gum, wood chems.		250	4,378

* Water/Land totals only include facilities with releases greater than a certain amount - usually 1000 to 10,000 lbs.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone books government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call: EPAs Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the: Community Right-to-Know Hotline: (800) 424-9346.