

Frequently Asked Questions About**DIOXIN****What is dioxin?**

The name “dioxin” is given to several hundred chemical compounds that share the same chemical properties. They are divided into three groups: polychlorinated dibenzo-*p*-dioxins (PCDDs), polychlorinated dibenzofurans (PCDFs), and certain polychlorinated biphenyls (PCBs). Pure dioxins are colorless solids or crystals.

Where can dioxin be found in the environment?

Dioxin may be produced when almost any organic substance is burned. It occurs naturally in the environment as the result of forest fires and volcanic eruptions. Scientists have found dioxin in sediments in lakes and rivers, plant leaves, and other organic substances. A low level of dioxin always will be present in the environment.

Man-made sources of dioxin include commercial and municipal waste incineration, fossil fuel combustion, chemical and paper manufacturing, automobile exhaust, fertilizer production and use, and cigarette smoking.

How is dioxin used?

The peak period for dioxin production in the U.S. was during the 1960s and 1970s, when it was used and released by the pesticide, manufacturing, and municipal waste incineration industries. Since then, regulations have dramatically reduced dioxin levels. Sediment samples from around the world indicate an 80 percent decline in dioxin concentrations since 1970.

Do electric utilities release dioxin into the environment?

Yes. The electric industry released nearly 726 grams of dioxin and dioxin-like compounds, or much less than one percent of all dioxins released by industries in 2006. Total disposal or other releases for dioxin and dioxin-like compounds was 130,277 grams.

Although the process is not fully understood, it is generally believed that dioxin forms in the presence of chlorine during combustion. Less toxic forms of dioxin may result from high temperature combustion processes at many power plants. Dioxin is hard to detect because it is released in minute quantities, and existing technologies are not capable of measuring such small amounts. Until better detection equipment is developed, utility dioxin reporting will be less than 100-percent accurate.

Beginning in 2001, electric utilities and all other industries were required to report estimated dioxin releases for the first time to EPA under its Toxics Release Inventory (TRI) program. Facilities that estimate releases over 0.1 gram of dioxin are required to report their emission estimates to EPA.

How could I be exposed to dioxin? Will exposure affect me?

For the average person, up to 95 percent of dioxin exposure can be attributed to the consumption of meat, dairy products, and fish. It has been confirmed that dioxin is more readily present in fatty products, and a diet based upon low-fat intake can help reduce dioxin ingestion. Smokers also are likely to inhale dioxin present in tobacco. There is no way to rid the body of dioxin, however, except through the body's natural and slow processes.

Dioxin is common and is continually present in the environment. Humans are always exposed to a certain background level. When exposed to high levels of dioxin, there can be harmful health consequences. A common effect is a skin condition called chloracne. Several studies also suggest workers exposed to high levels of dioxin over many years have increased risk of cancer.

What do EPA and other experts say about dioxin?

EPA released a preliminary dioxin reassessment study in 1999. This study is currently undergoing scientific review. Preliminary scientific reviews of the reassessment indicate dioxin is not considered a cancer-causing agent, though EPA had concluded that it was in the reassessment. The agency has acknowledged that dioxin emissions to the environment dropped 80 percent from 1987 through 1995, due to increased regulatory requirements and actions taken by industries. EPA also believes that uncontrolled burning of waste and accidental fires at landfills may be the largest currently known sources of dioxin releases.

EPA continues to regulate several industrial sources of dioxin. The agency also continues to study and research the health effects of these toxics, as there is still considerable uncertainty about questions like:

- What is the natural background level of dioxin?
- Is there a low level of exposure to dioxin that is harmless?

EPA and others are working to resolve these questions and reach consensus on what level of dioxin exposure is "acceptable."

Where can I get more information?

- Electric Power Research Institute, 3412 Hillview Ave., P.O. Box 10412, Palo Alto, CA 94303; (800) 313-EPRI; <http://www.epri.com>
- U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, 200 Independence Ave., S.W., Washington, D.C. 20201; (877) 696-6775; <http://www.atsdr.cdc.gov/>
- U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., N.W., Washington, D.C. 20460; (202) 260-2090; <http://www.epa.gov/>



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