

Environmental Assessment

Dioxin

The Issue

"Dioxins" refers to a group of toxic chemical compounds that share certain chemical structures and biological characteristics. Dioxins can be released into the environment through forest fires, backyard burning of trash, certain industrial activities, and residue from past commercial burning of waste. Dioxins break down very slowly and past releases of dioxins from both man-made and natural sources still exist in the environment.

Almost every living creature has been exposed to dioxins. Studies have shown that exposure to dioxins at high enough levels may cause a number of adverse health effects, including cancer. The health effects associated with dioxins depend on a variety of factors including: the level of exposure, when someone was exposed, and for how long and how often someone is exposed.

Over the past several years, EPA, state governments and industry have worked together to dramatically reduce known and measurable industrial dioxin emissions. These efforts have reduced air emissions of dioxins by 90 percent so that today, most Americans have only low-level exposure to dioxins.

EPA Action

On February 17, 2012, EPA finalized its final [Reanalysis of Key Issues Related to Dioxin Toxicity and Response to NAS Comments, Volume 1](#). This document provides hazard identification and dose-response information on 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) and the most up-to-date analysis of non-cancer health effects from TCDD exposure. The report also include an [oral reference dose \(RfD\)](#) and a detailed and transparent description of the underlying data and analyses.

History

Sep 1984 EPA released the final report, [Health Effects Assessment for 2,3,7,8-Tetrachlorodibenzo-P-Dioxin](#).

Sep 1985 EPA released the final report, [Health Assessment Document for Polychlorinated Dibenzo-P-Dioxins](#).

Jun 1994 EPA released the draft document, [Health Assessment Document for 2,3,7,8-Tetrachlorodibenzo-P-Dioxin \(TCDD\) and Related Compounds](#)

Sep 1994 EPA launched the [Dioxin Exposure Initiative \(DEI\)](#), a research program to further evaluate the exposure of Americans to this class of compounds.

Sep 1995 EPA's Science Advisory Board (SAB) released the report, [A Second Look at Dioxin](#). (PDF, 129 pp., 330,353 bytes)

Sep 2000 EPA released the [SAB Review Draft of the Dioxin Assessment](#) for review and comment.

May 2001 The SAB released the [Dioxin Reassessment - An SAB Review of the Office of Research and Development's Reassessment of Dioxin](#). (PDF, 80 pp., 188,323 bytes)

Oct 2004 EPA released the [Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-P-Dioxin \(TCDD\) and Related Compounds National Academy Sciences \(External Review Draft\)](#), to the National Academy of Science in preparation for their first panel meeting that was held 11/22 -23/2004 in Wash., DC. **This is the most current version of the EPA Dioxin Reassessment.**

Jul 2006 NAS released [Health Risks from Dioxin and Related Compounds: Evaluation of the EPA Reassessment](#).

Nov 2008 EPA released a [preliminary literature search](#) to address EPA's Responses to the NAS comments on the 2003 Dioxin Reassessment report.

Feb 2009 EPA hosted a 3-day public, scientific workshop to assist EPA in responding to the NAS reports on Dioxin.

[[Workshop Announcement and details](#)]

May 2009 EPA released the [2009 Science Plan for activities related to Dioxins in the environment](#).

Jun 2009 EPA released the [Dioxin Workshop Summary report containing discussions and conclusions](#) from the Feb 18-20, 2009 workshop held in Cincinnati, Ohio.

Sep 2009 EPA released the [University of Michigan study of dioxin exposures in Midland, Michigan](#).

Dec 2009 EPA released the [Review of State Soil Cleanup Levels for Dioxin](#).

May 2010 EPA released EPA's [Reanalysis of Key Issues Related to Dioxin Toxicity and Response to NAS Comments](#) under the IRIS process, which includes the release of the [interagency comments and pre-release drafts](#).

Related Links

- [EPA Analytical Method 1613](#) for analysis of dioxin and other related compounds.
- [Dioxin Overview: from EPA's Office of Chemical Safety and Pollution Prevention \(OCSP\)](#)

Best Resources

U.S. EPA. [An Inventory of Sources and Environmental Releases of Dioxin-Like Compounds in the U.S. for the Years 1987, 1995, and 2000 \(Final, Nov 2006\)](#). U.S. Environmental Protection Agency, Washington, DC, EPA/600/P-03/002F.

U.S. EPA. [An Exploratory Study: Assessment of Modeled Dioxin Exposure in Ceramic Art Studios \(2008 Final\)](#). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-06/044F, 2008.

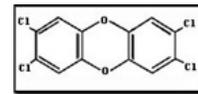
U.S. EPA. [Pilot Survey of Levels of Polychlorinated Dibenzo-P-Dioxins \(PCDDs\), Polychlorinated Dibenzofurans \(PCDFs\), Polychlorinated Biphenyls \(PCB\) and Mercury in Rural Soils of the U.S.](#) U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-05/043F, 2007.

U.S. EPA. [EPA Regulations Related to Dioxin](#). U.S. Environmental Protection Agency, Washington, DC, 2003.

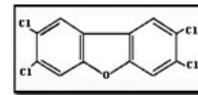
Recent Updates

- 02/12: [Press Release: Dioxin Non-Cancer Science Assessment](#)
- 02/12: [Consumer Fact Sheet: Dioxin Non-Cancer Science Assessment](#) (PDF, 1pp, 71Kb)
- 02/12: [Final Non-Cancer Dioxin Science Assessment](#)
- 02/12: [Dioxin Science Plan Update](#)
- 11/10: [Reports on Dioxin emitted during Deepwater Horizon BP Spill](#)

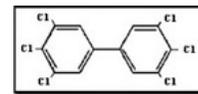
Dioxin and Related Compounds



2,3,7,8-Tetrachlorodibenzo-p-dioxin



2,3,7,8-Tetrachlorodibenzofuran



3,3',4,4',5,5'-Hexachlorobiphenyl

List additional resources associated with Dioxin