



# 1,4-Dioxane

## Why am I being warned about potential exposure to 1,4-dioxane?



- 1,4-Dioxane is on the [Proposition 65](#) list because it can cause cancer. Exposure to 1,4-dioxane may increase the risk of cancer.
- California's Proposition 65 requires [businesses](#) to warn people before exposing them to a significant amount of a [chemical](#) that can cause cancer or birth defects or other reproductive harm.

## What is 1,4-dioxane?

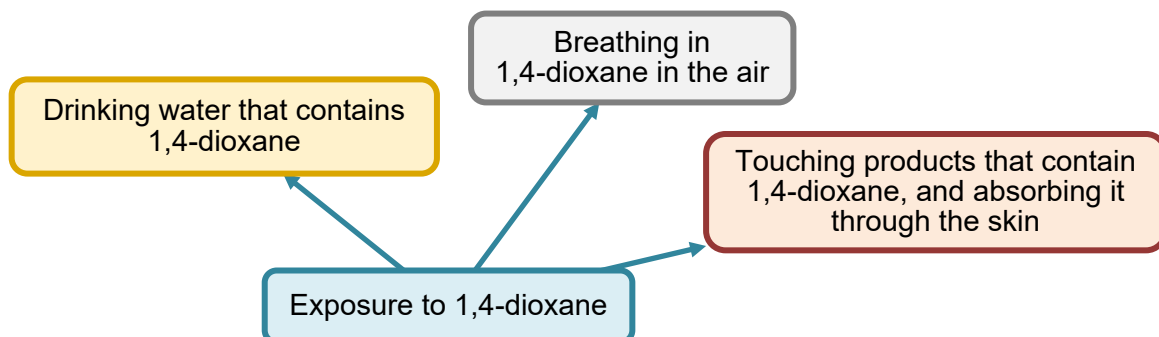
- 1,4-Dioxane is a chemical used to make some paints, varnishes, and adhesives, and is in some household cleaning and personal care products, in the form of a manufacturing byproduct.

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## Where can 1,4-dioxane be found?

- 1,4-Dioxane is a contaminant in some household cleaning and personal care products such as dish soap, dishwasher and laundry detergent, shampoo, and body wash.
  - ▶ 1,4-Dioxane is not intentionally added to these products but is formed during the manufacture of ethoxylated surfactants (chemicals commonly found in household cleaning and personal care products).
  - ▶ 1,4-Dioxane has been found in some drinking water. California monitors the amount of 1,4-dioxane in publicly supplied drinking water.

## Some ways you can be exposed to 1,4-dioxane:



- During pregnancy, 1,4-dioxane can pass from mother to baby.

### How can I reduce my exposure to 1,4-dioxane?

- ✓ Before buying household cleaning and personal care products, check product labels for ingredients whose names contain or end with the following: polyethylene, polyethylene glycol, PEG, polyethoxyethylene, -eth, or -oxynol. Products with these ingredients may contain 1,4-dioxane as a byproduct.
- ✓ Contact your water supplier if you have questions or concerns about the possible presence of 1,4-dioxane in your drinking water.

### For more information:

#### General Fact Sheets and Resources

- California Environmental Protection Agency (CalEPA)  
Department of Toxic Substances Control (DTSC)
  - ▶ 1,4-Dioxane in Personal Care and Cleaning Products  
<https://dtsc.ca.gov/scp/1-4-dioxane/>
- US Food and Drug Administration (FDA)
  - ▶ 1,4-Dioxane in Cosmetics: A Manufacturing Byproduct  
<https://www.fda.gov/cosmetics/potential-contaminants-cosmetics/14-dioxane-cosmetics-manufacturing-byproduct>

#### Scientific Information on 1,4-Dioxane

- California Environmental Protection Agency (CalEPA)  
State Water Resources Control Board (SWRCB)
  - ▶ 1,4-Dioxane  
[https://www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/14-Dioxane.html](https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/14-Dioxane.html)
- US Department of Health and Human Services (HHS)  
National Toxicology Program (NTP)
  - ▶ Report on Carcinogens. 1,4-Dioxane  
<https://ntp.niehs.nih.gov/ntp/roc/content/profiles/dioxane.pdf>
- US Environmental Protection Agency (US EPA)
  - ▶ Technical Fact Sheet – 1,4-Dioxane  
[https://19january2021snapshot.epa.gov/sites/static/files/documents/technical\\_fact\\_sheet\\_14-dioxane\\_2013.pdf](https://19january2021snapshot.epa.gov/sites/static/files/documents/technical_fact_sheet_14-dioxane_2013.pdf)
  - ▶ Risk Evaluation for 1,4-Dioxane  
<https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-evaluation-14-dioxane>
- World Health Organization (WHO)  
International Agency for Research on Cancer (IARC)
  - ▶ “Mineral Oils, Untreated or Mildly Treated” section in Re-evaluation of Some Organic Chemicals, Hydrazine and Hydrogen Peroxide (Part 1, Part 2, Part 3) (1999), vol. 71F, pages 589-602.  
<https://publications.iarc.fr/89>

**Proposition 65**

- California Environmental Protection Agency (CalEPA)  
Office of Environmental Health Hazard Assessment (OEHHA)
  - ▶ Proposition 65: Background  
<https://www.p65warnings.ca.gov/faq>
  - ▶ Proposition 65: The List of Chemicals  
<https://www.p65warnings.ca.gov/chemicals>
  - ▶ Proposition 65: Fact Sheets  
<https://www.p65warnings.ca.gov/fact-sheets>