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.

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/](https://dtsc.ca.gov/scp/1-4-dioxane/)

- US Food and Drug Administration (FDA)
  - 1,4-Dioxane in Cosmetics: A 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](https://ntp.niehs.nih.gov/ntp/roc/content/profiles/dioxane.pdf)

- US Environmental Protection Agency (US EPA)
  - Technical Fact Sheet – 1,4-Dioxane
  - Risk Evaluation for 1,4-Dioxane

- World Health Organization (WHO) International Agency for Research on Cancer (IARC)
    - [https://publications.iarc.fr/89](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