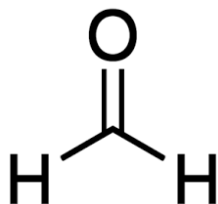




Nontechnical Summary of the TSCA Risk Evaluation for Formaldehyde



CH₂O (CASRN: 50-00-0)

Why Is EPA Providing This Document?

EPA evaluated the risks of formaldehyde to human health and the environment under the Toxic Substances Control Act ([TSCA](#)). This document summarizes the results of the completed risk evaluation.

What Is Formaldehyde and How Is it Used?

Formaldehyde is both a manufactured and a naturally occurring gas. It is also produced during combustion, decomposition of organic matter like leaves, and in the human body as a normal part of metabolism. Industry combines formaldehyde with other chemicals to make a wide variety of other chemicals and products used in manufacturing—ranging from textiles and foam bedding/seating to paints/coatings and adhesives/sealants to plastics and rubber. Formaldehyde is also used in many composite wood products and construction materials throughout the United States, including insulation and roofing as well as furniture.

How Might Persons Be Exposed to Formaldehyde?

Exposure to formaldehyde can occur almost anywhere—in both indoor and outdoor environments—including homes, vehicles, schools, and workplaces. People are exposed to higher concentrations of formaldehyde while using products like glues and sealants that contain formaldehyde, after moving into a new or remodeled home, or after introducing new products (*e.g.*, furniture, flooring, cabinets) into their homes or workspaces. Exposures from new

products are expected to be highest within the first 3 months, but lower levels of exposure may continue for a long period as formaldehyde continues to be released over time. In addition, people may be continually exposed to high levels of formaldehyde if they live near sites that release formaldehyde.

Workers may be exposed to higher levels of formaldehyde when they work in places that make or use formaldehyde. Most people, including workers, can be exposed by breathing formaldehyde or getting it on their skin. EPA evaluated all these exposures to determine if there was unreasonable risk to human health.

Can Formaldehyde Harm People Who Are Exposed?

Studies in people demonstrate that short-term exposures to formaldehyde in air can cause sensory irritation such as eye and respiratory inflammation. Sensory irritation effects go away when exposure stops. Longer-term exposure to formaldehyde in air might cause cancer and respiratory effects including reduced lung function and asthma. Skin contact with formaldehyde can cause an allergic response.

Can Formaldehyde Harm the Environment?

Formaldehyde is not expected to be harmful to the environment. The 2024 risk evaluation assessed risks to aquatic vertebrates and invertebrates as well as terrestrial invertebrates, mammals, and birds.

EPA also found that formaldehyde is not expected to persist in water, sediment, or soil based on its physical and chemical properties. Although formaldehyde may be present in air, concentrations are expected to be well below those that could cause harm to the environment.

How Has EPA Assessed Formaldehyde under TSCA?

EPA's finalized [Risk Evaluation for Formaldehyde](#) evaluated risks to the following

groups, which include potentially exposed or susceptible subpopulations:

- workers in operations who manufacture and process formaldehyde and workers who produce or make products containing formaldehyde;
- consumers who use glues, paints, coatings, plastics, rubber, furniture, etc. containing formaldehyde
- members of the general population exposed to formaldehyde from household furnishings and building materials or who live near industrial and commercial facilities that release formaldehyde; and
- people who may be more susceptible to formaldehyde due to age, genetic variations, health conditions, or other factors.

What Is EPA's Final Risk Determination for Formaldehyde under TSCA?

EPA did not identify unreasonable risk of injury to the environment. Formaldehyde presents an unreasonable risk of injury to human health.

These unreasonable risks apply to (1) workers who breathe or whose skin is exposed to formaldehyde; and (2) consumers who breathe or touch formaldehyde while using products and articles such as glues, paints, plastics, and furniture. In addition, EPA identified some risk to people who breathe air outdoors or indoors that contains formaldehyde.

The following TSCA conditions of use (COUs)¹ significantly contribute to the unreasonable risk of injury to human health.²

- Manufacturing (domestic manufacture)
- Manufacturing (import)
- Processing – as a reactant, including for use in adhesives and sealant, processing aids specific to petroleum production, and agricultural chemicals

- Processing – incorporation into an article, including finishing agents in textiles, apparel, and leather; additives in paint, coating, and rubber products; adhesives and sealant chemicals in wood products; and plastic material and resins
- Processing – incorporation into a formulation, mixture, or reaction product, including asphalt, paving, roofing, and coating materials; solvents, paints, and coatings; agricultural chemicals (nonpesticidal); lubricants manufacturing; and soap and cleaning compounds
- Processing – repackaging – sales to distributors for laboratory chemicals
- Processing – recycling
- Distribution – distribution in commerce
- Industrial use – as a process aid in petroleum production and hydraulic fracturing, and in construction oxidizing/reducing agents
- Industrial use – chemical substances in industrial products, including paints and coatings, adhesives and sealants, lubricants, and aerospace use
- Commercial use – including use in floor coverings, foam seating, and bedding; furniture and furnishings; cleaning products; textile (fabric) dyes; laundry and dishwashing products; construction and building materials; machinery, mechanical appliances, and electrical/electronic articles; automotive articles and care products; lawn and garden products; and arts, crafts, and hobby materials
- Consumer use – including use in floor coverings; cleaning and furniture care products; furniture and furnishings; fabric, textile, and leather products (clothing); lubricants and fuels; paper, plastic and rubber products; toys, playground, and sporting equipment; and photographic supplies

¹ Under TSCA, COUs are the specific circumstances, “as determined by the Administrator, under which a chemical substance is intended, known, or reasonably foreseen to

be manufactured, processed, distributed in commerce, used, or disposed of.”

² For a complete list of all TSCA COUs, see the [Executive Summary for the Risk Evaluation for Formaldehyde](#).

- Disposal.

How Will EPA Protect Human Health from Formaldehyde under TSCA?

Following a final determination of unreasonable risk, TSCA requires EPA to address the unreasonable risk. The Agency will propose regulations applying requirements to address the unreasonable risk. After taking public comment on proposed regulations, TSCA requires EPA to finalize risk management regulations for formaldehyde. Regulations could include restricting formaldehyde in specific uses, worker protections, labeling, banning, or recordkeeping requirements.

EPA encourages workers to follow workplace or other safety requirements, including the use of personal protective equipment such as respirators, protective clothing, and gloves. The Agency also encourages consumers to follow instructions when working with products or articles containing formaldehyde, including the use of recommended respirators, protective clothing, and gloves.

For More Technical Information, Including Previous EPA Actions, See the Following:

- [Risk Evaluations for Existing Chemicals under TSCA](#)
- [2024 IRIS Toxicological Review of Formaldehyde \(Inhalation\)](#)
- See EPA's [Risk Evaluation for Formaldehyde](#) website for a listing and access to the Executive Summary and major technical support documents
- See the Docket, [EPA-HQ-OPPT-2018-0438](#), for a complete listing and access to all risk evaluation-related assessments and supporting material.
- See the Docket, [EPA-HQ-OPPT-2023-0613](#), for all files related to the peer review and public comments on the Draft Risk Evaluation for Formaldehyde