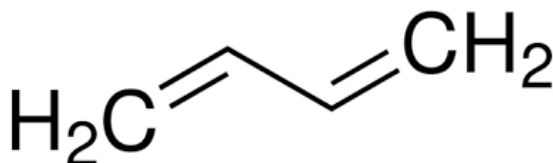




Nontechnical Summary of the TSCA Draft Risk Evaluation for 1,3- Butadiene



C₄H₆ (CASRN: 106-99-0)

Why Is EPA Providing This Document?

EPA evaluated the risks of 1,3-butadiene to human health and the environment under the Toxic Substances Control Act ([TSCA](#)). This document summarizes the results of the draft risk evaluation.

What Is 1,3-Butadiene and How Is it Used?

1,3-Butadiene is a colorless gas produced from fossil fuel (petroleum/petrochemical) processing. It is primarily used as a building block to make plastics and synthetic rubbers like latex. Every year, billions of pounds of 1,3-butadiene are produced, imported, and used throughout the United States.

How Might Persons Be Exposed to 1,3-Butadiene?

Exposure to 1,3-butadiene can occur in and near workplaces that manufacture plastic materials and synthetic rubber products like tires or that use it in the production of other chemicals. 1,3-Butadiene is primarily released into the air from manufacturing and processing facilities. Workers can be exposed by breathing 1,3-butadiene while making plastic or rubber products or otherwise using 1,3-butadiene in the workplace. Once formed into plastics and synthetic rubber, 1,3-butadiene is not released.

Airborne 1,3-butadiene does not travel far before quickly breaking down into smaller chemicals, including formaldehyde. It will not settle onto land or into water. 1,3-Butadiene is also formed from burning tobacco, wood, and fuel. As a result, people can be exposed to 1,3-butadiene by breathing in air near manufacturing and processing facilities, automobile exhaust, fires, as well as from smoking.

How Has EPA Assessed 1,3-Butadiene under TSCA?

In December 2024, EPA published the [Draft Risk Evaluation for 1,3-Butadiene](#) that evaluated risks to the following groups:

- workers in operations that manufacture and process 1,3-butadiene and workers that use products containing 1,3-butadiene;
- people who live near 1,3-butadiene release sites; and
- people who may be more susceptible to 1,3-butadiene due to age (including young children), sex, genetic variations, health conditions, or other factors.

The 2024 draft risk evaluation also assessed risks to the environment, including aquatic and terrestrial wildlife.

Is 1,3-Butadiene Harmful to People?

Based on human studies, exposure to 1,3-butadiene can cause leukemia, a type of blood cancer. Based on laboratory animal studies, exposure to 1,3-butadiene might cause reduced birthweight and anemia¹ in people. Workers and others nearby² who breathe excess levels of 1,3-butadiene can be at risk for harmful blood effects and reduced birthweight pregnancies. They can also be at risk for cancer. Communities living near facilities that release 1,3-butadiene to the air can also be at

¹ Anemia is a blood disorder that occurs when the body does not produce enough healthy red blood cells.

² Under TSCA, “occupational non-users” are workers in close proximity with other workers using an industrial product such as 1,3-butadiene.

risk for these effects. However, use of household items containing plastic or synthetic rubber made from 1,3-butadiene does not present risk to human health.

Is 1,3-Butadiene Harmful to the Environment?

1,3-Butadiene is not expected to be harmful to the environment. Exposure is not expected via water or soil while exposure to wildlife via air is not expected because 1,3-butadiene quickly breaks down. Therefore, EPA found that 1,3-butadiene does not present an unreasonable risk to the environment under its TSCA conditions of use (COUs).³

What Is EPA's Draft Risk Determination for 1,3-Butadiene under TSCA?

EPA has preliminarily determined that 1,3-butadiene presents an unreasonable risk of injury to human health. It does not present an unreasonable risk of injury to the environment.

EPA considered the following factors when determining unreasonable risk from 1,3-butadiene:

- the nature and severity of the health and environmental effects;
- the duration, amount, and frequency of 1,3-butadiene exposures;
- the populations exposed; and
- the Agency's confidence in the risk estimates.

The following TSCA COUs significantly contribute to the unreasonable risk:

- Domestic manufacturing
- Import
- Processing as a reactant – intermediate
- Processing as a reactant – monomer used in polymerization process
- Processing: incorporation into formulation, mixture, or reaction

product – processing aids, not otherwise listed

- Processing – incorporation into formulation, mixture, or reaction product – other
- Processing – incorporation into article – polymer in – rubber and plastic product manufacturing
- Processing – repackaging
- Processing – recycling
- Commercial use – laboratory chemicals
- Disposal.

The following TSCA COUs do *not* significantly contribute to the unreasonable risk:

- Industrial use – adhesives and sealants;
- Commercial use – fuels and related products
- Commercial uses associated with plastic and rubber (*e.g.*, tires, toys, furnishings)
- Commercial use – automotive care products
- Commercial use – lubricant additives, including viscosity modifier
- Commercial use – paints and coatings, including aerosol spray paint
- Commercial use – adhesives and sealants, including epoxy resins
- Consumer uses associated with plastic and rubber (*e.g.*, tires, toys, furnishings)
- Distribution in commerce.

How Will EPA Protect Human Health from 1,3-Butadiene under TSCA?

If, after public comment and review of the draft risk evaluation, EPA determines that 1,3-butadiene presents an unreasonable risk of injury to human health or the environment, TSCA requires the Agency to address the unreasonable risk. Regulations could include banning or restricting 1,3-butadiene in specific uses or labeling or recordkeeping requirements.

³ 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.”

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

- [Risk Evaluations for Existing Chemicals under TSCA](#)
- EPA's [2024 Draft Risk Evaluation for 1,3-Butadiene](#)
- The 2024 draft risk evaluation and supporting materials can be found in docket [EPA-HQ-OPPT-2024-0425](#)