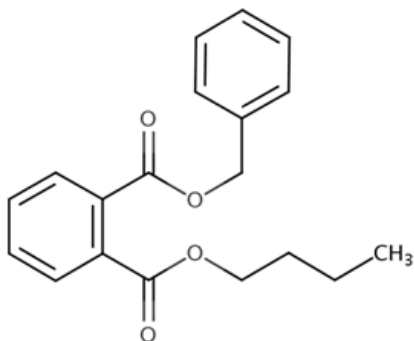




## Nontechnical Summary of the TSCA Risk Evaluation for Butyl Benzyl Phthalate (BBP)



C<sub>19</sub>H<sub>20</sub>O<sub>4</sub> (CASRN: 85-68-7)

### Why Is EPA Providing This Document?

EPA evaluated the risks of BBP to human health and the environment under the Toxic Substances Control Act ([TSCA](#)). This document summarizes the results of the completed [Risk Evaluation for Butyl Benzyl Phthalate \(BBP\)](#).

### What Is BBP and How Is It Used?

BBP is a clear, oily liquid. Produced and imported BBP is primarily used as a plasticizer or stabilizing agent in the manufacture of adhesives, paints, coatings, and rubbers. BBP is also used in PVC (polyvinyl chloride) and non-PVC plastic products across consumer, commercial, and industrial applications.

### How Can Persons and the Environment Be Exposed to BBP?

Exposure may occur in and near workplaces when making or using BBP-containing products, which can also result in releases to water. Most BBP released into water ends up in the sediment of nearby lakes and rivers. BBP released in the air can attach to dust particles and deposit on land or into water. Such emissions can contribute to the exposure of the general population to BBP. In indoor

environments, BBP released from products over time can also adhere to dust. Consumers may be exposed from use of BBP-containing products. EPA evaluated all these exposures to determine if there was unreasonable risk of BBP to human health and the environment.

### Can BBP Harm People Who Are Exposed?

Based on findings in laboratory animals, BBP can cause a range of non-cancer health effects in people if exposure is at a level that causes toxicity. The most sensitive adverse (harmful) effects are on the developing male reproductive system, causing what is known as “phthalate syndrome.”

### Can BBP Harm the Environment?

BBP can be harmful to the environment if exposure is at a level that causes toxicity. The Agency assessed risks to aquatic vertebrates; aquatic, sediment-dwelling, and soil invertebrates; aquatic plants and algae; and terrestrial mammals and plants. Based on the scientific evidence, BBP causes an unreasonable risk of injury to the environment through chronic exposure to aquatic vertebrates from direct discharge to surface water. Although BBP can also be present in air, soil, and sediment, concentrations are expected to be below those that could cause harm to the environment.

### How Has EPA Assessed BBP Under TSCA?

EPA assessed risks to human health and the environment. As required by law, the Agency identified and evaluated potentially exposed or susceptible subpopulations (PESS<sup>1</sup>), which include the following:

- workers, including those who manufacture, process, distribute, or use BBP in the workplace;
- females of reproductive age;

<sup>1</sup> These groups may have higher exposures to BBP or be more likely (predisposed) to be harmed by exposure to BBP.

- pregnant women, infants, children, and adolescents;
- people who frequently use consumer products and/or articles containing high concentrations of BBP;
- people living in close proximity to releasing facilities (“fenceline” communities); and
- subsistence fishers and tribal populations whose diets include large amounts of fish.

EPA also evaluated risks from cumulative exposures to BBP and five other phthalates that can all cause phthalate syndrome.<sup>2</sup> The cumulative risk assessment (CRA) describes analyses considering BBP exposure under the TSCA conditions of use (COUs<sup>3</sup>) as the “individual assessment” or “single chemical assessment” and analyses also considering background exposure to other phthalates as the “cumulative assessment.”

The multi-chemical aspect of the evaluation is derived from the addition of *background phthalate exposure* as estimated from National Health and Nutrition Examination Survey (NHANES) biomonitoring data. Thus, risks are characterized not only for occupational and consumer exposures to BBP alone, but also in conjunction with cumulative phthalate exposures that (1) may be experienced by the U.S. population, and (2) cannot be attributed to a specific COU under TSCA.

In July 2025, EPA released the [Draft Risk Evaluation for Butyl Benzyl Phthalate \(BBP\)](#) for public comment. The final risk evaluation reflects changes made as the result of public comment and external peer review by the Science Advisory Committee on Chemicals (SACC<sup>4</sup>), who provided feedback across draft

phthalate TSCA risk evaluations, including technical support documents for BBP.

### **What Is EPA’s Final Risk Determination for Butyl Benzyl Phthalate Under TSCA?**

*BBP presents an unreasonable risk of injury to human health driven by risk to workers through two COUs. EPA did not identify contributions to unreasonable risk of injury due to exposure to “occupational non-users” (ONUs<sup>5</sup>), consumers, or the general population, under any COU.*

*BBP presents an unreasonable risk of injury to the environment through three COUs driven by risk to aquatic vertebrates as a result of direct discharges of BBP to surface waters.*

The following two COUs significantly contribute to the unreasonable risk of injury to the health of workers through inhalation exposure:

- Industrial use – construction, paint, electrical, and metal products – paints and coatings; and
- Commercial use – construction, paint, electrical, and metal products – paints and coatings.

The following seven COUs significantly contribute to the unreasonable risk of injury to the environment, specifically aquatic vertebrates exposed to BBP through surface water:

- Manufacturing – domestic manufacturing;
- Processing – incorporation into articles – plasticizers (adhesive manufacturing; fabric, textile, apparel, and leather products manufacturing; building and construction materials manufacturing; plastics product manufacturing; rubber

<sup>2</sup> The six phthalates included in the cumulative assessment are [BBP](#), dibutyl phthalate ([DBP](#)), dicyclohexyl phthalate ([DCHP](#)), diethylhexyl phthalate ([DEHP](#)), diisobutyl phthalate ([DIBP](#)), and diisononyl phthalate ([DINP](#)).

<sup>3</sup> 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.”

<sup>4</sup> See [EPA-HQ-OPPT-2024-0551](#) for further information about and a full list of materials reviewed by the SACC.

<sup>5</sup> ONUs are employed persons who do not directly handle the chemical substance but may be indirectly exposed to it as part of their employment due to their proximity to the chemical.

product manufacturing; transportation equipment manufacturing);

- Industrial use – construction, paint, electrical, and metal products – paints and coatings;
- Industrial use – packaging, paper, plastic, hobby products – inks, toner, and colorant products;
- Commercial use – construction, paint, electrical, and metal products – paints and coatings;
- Commercial use – packaging, paper, plastic, hobby products – inks, toner, and colorant products; and
- Disposal.

A total of 31 COUs do *not* significantly contribute to the unreasonable risk for BBP, nor do cumulative exposures contribute to unreasonable risks—including 1 related to manufacturing, 4 to processing, 1 to distribution, 14 to industrial and commercial uses, and 11 associated with consumer uses of BBP. These are described in the [\*Risk Evaluation for Butyl Benzyl Phthalate \(BBP\)\*](#).

### **How Will EPA Protect Human Health and the Environment from Butyl Benzyl Phthalate Under TSCA?**

Following this final determination of unreasonable risk, TSCA requires EPA to propose a regulation to mitigate the unreasonable risk of BBP. After taking public comment on the proposed regulation, TSCA requires the Agency to finalize risk management regulations for BBP. Such regulations could include requirements for worker protection, labeling, recordkeeping, or restricting BBP for specific uses.