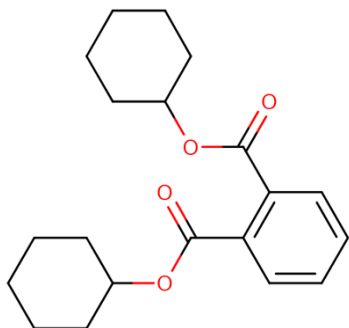




Nontechnical Summary of the TSCA Risk Evaluation for Dicyclohexyl Phthalate (DCHP)



C₂₀H₂₆O₄ (CASRN: 84-61-7)

Why Is EPA Providing This Document?

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

What Is DCHP and How Is It Used?

DCHP is a white granular solid or crystalline powder. Produced and imported DCHP is primarily used as a plasticizer or stabilizing agent in the manufacture of adhesives, paints and coatings, plastic and rubber materials and products, and printing ink. Commercial and industrial applications of DCHP include use in transportation equipment, computer and electronic products, building/construction materials, and as laboratory chemicals.

How Can Persons and the Environment Be Exposed to DCHP?

Exposure may occur in and near workplaces when making or using DCHP-containing products, which can also result in releases to

water. Most DCHP released into water ends up in the sediment of nearby lakes and rivers. DCHP released in the air can attach to dust particles and deposit on land or into water. In indoor environments, DCHP released from products over time can also adhere to dust. EPA evaluated all these exposures to determine if there was unreasonable risk of DCHP to human health and the environment.

Can DCHP Harm People Who Are Exposed?

Based on findings in laboratory animals, DCHP 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) effect can result from decreased fetal testicular testosterone levels, causing what is known as “phthalate syndrome.”

Can DCHP Harm the Environment?

Plant and animal exposure to DCHP is not expected via water or soil. EPA assessed risks to the environment—specifically to aquatic organisms, aquatic-dependent mammals, and land mammals. The Agency’s evaluation of hazard data for fish, aquatic invertebrates, sediment-dwelling organisms, algae, and terrestrial invertebrates and mammals indicated no adverse effects from exposures to DCHP. Therefore, EPA finds that DCHP does not present an unreasonable risk to the environment under its TSCA conditions of use (COUs¹).

How Has EPA Assessed DCHP 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 (PESS²), which include the following:

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 These groups may have higher exposures to DCHP or be more likely (predisposed) to be harmed by exposure to DCHP.

- workers, including those who manufacture, process, distribute, or use DCHP in the workplace;
- females of reproductive age;
- pregnant women, infants, children, and adolescents;
- people who frequently use consumer products and/or articles containing high concentrations of DCHP;
- 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 DCHP and five other phthalates that can all cause phthalate syndrome.³ The cumulative risk assessment (CRA) describes analyses considering DCHP exposure under the COUs 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 DCHP 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 January 2025, EPA released the [Draft Risk Evaluation for Dicyclohexyl Phthalate \(DCHP\)](#) for public comment and peer review. The final risk evaluation reflects changes made as the result of public comments and external peer review by the Science Advisory Committee on

³ The six phthalates included in the cumulative assessment are butyl benzyl phthalate ([BBP](#)), dibutyl phthalate ([DBP](#)), [DCHP](#), diethylhexyl phthalate ([DEHP](#)), diisobutyl phthalate ([DIBP](#)), and diisononyl phthalate ([DINP](#)).

Chemicals ([SACC](#)⁴), who provided feedback across draft phthalate TSCA risk evaluations, including DCHP.

What Is EPA’s Final Risk Determination for Dicyclohexyl Phthalate Under TSCA?

DCHP 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” (ONUs⁵), consumers, or the general population, under any TSCA COU.

EPA did not identify contributions to unreasonable risk of injury to the environment from DCHP under any TSCA COU.

Two COUs significantly contribute to unreasonable risk of injury to the health of workers through acute inhalation and acute cumulative exposures. This risk is based on both the DCHP single chemical exposure analysis and the cumulative analysis:

- Industrial use – paints and coatings; and
- Commercial use – paints and coatings.

No COUs significantly contribute to the unreasonable risk of injury to the environment (*i.e.*, surface water exposure to aquatic organisms, aquatic-dependent mammals, and land animals) through any type of exposure.

A total of 22 COUs do *not* significantly contribute to unreasonable risk for DCHP, nor do cumulative exposures contribute to unreasonable risks—including 2 related to manufacturing, 6 to processing, 1 to distribution, 9 to industrial and commercial uses, 3 associated with consumer uses, and 1 related to disposal of DCHP. These are described in the [Risk Evaluation for Dicyclohexyl Phthalate \(DCHP\)](#).

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

⁵ 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.

How Will EPA Protect Human Health from Dicyclohexyl Phthalate Under TSCA?

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