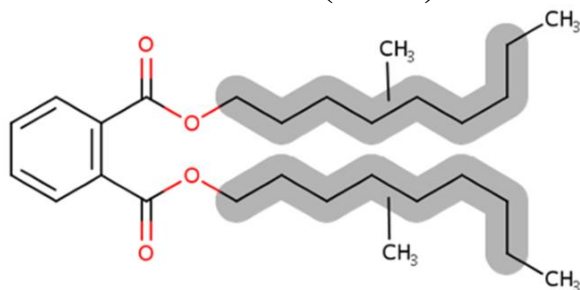


Nontechnical Summary of the TSCA Risk Evaluation for Diisodecyl Phthalate (DIDP)



(Representative Structure)

C₂₈H₄₆O₄ (CASRNs: 26761-40-0 and 68515-49-1)

Why Is EPA Providing This Document?

EPA evaluated the risks of DIDP 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 DIDP and How Is It Used?

DIDP is not a single compound but rather a clear, oily mixture used primarily as a “plasticizer” to produce flexible polyvinyl chloride (PVC) for various consumer, commercial, and industrial applications. DIDP is also used to manufacture a wide variety of building and construction materials, automotive articles, and other commercial and consumer products such as adhesives, paints, and electronics. There are other uses of DIDP that are specifically excluded from TSCA, such as cosmetics, medical devices, and food contact materials. EPA did not evaluate risk associated with these uses.¹

How Might Persons be Exposed to DIDP?

Workers can be exposed to DIDP when making or using DIDP-containing products in the workplace. During manufacturing, DIDP can be

released into the water—although most will end up in the sediment at the bottom of lakes and rivers, rather than in sources of drinking water. If DIDP is released into the air, it will attach to dust and be deposited on land or into water. Similarly, DIDP can be released from indoor products over time and adhere to dust. If this happens, people could inhale or ingest dust that contains DIDP. EPA evaluated all these exposures to determine if there was unreasonable risk to human health.

Can DIDP Harm People Who Are Exposed?

EPA found that exposure to DIDP can cause developmental effects in fetuses in laboratory animals (*e.g.*, more offspring died in groups of DIDP-treated rats than in controls). Based on animal models, high levels of exposure to DIDP can cause developmental toxicity in unborn babies of pregnant workers who inhale it during industrial and commercial applications (*e.g.*, use of adhesives, paints, and inspection fluid/penetrant).

Can DIDP Harm the Environment?

DIDP is not expected to be harmful to the environment. The 2024 risk evaluation assessed risks to the environment, including to aquatic vertebrates and invertebrates, such as zebrafish, plankton, and algae. It also assessed risks to rats to represent terrestrial animals that might be exposed to DIDP. EPA also found that DIDP is not expected to persist in water, sediment, or soil based on its physical and chemical properties. DIDP might be present in air; however, concentrations are expected to be well below those that could cause harm to the environment.

How Has EPA Assessed DIDP under TSCA?

In September 2024, EPA published the [Draft Risk Evaluation for DIDP](#) that evaluated risks to the following groups:

- workers including those who work in manufacturing DIDP or otherwise use DIDP in the workplace;

¹ EPA’s unreasonable risk findings for DIDP cannot be extrapolated to uses of DIDP that are not subject to TSCA and that the Agency did not evaluate.

- consumers who have DIDP-containing products in their homes;
- fishers and tribal populations whose diets include large amounts of fish; and
- members of the general population.

The 2024 assessment also considered groups of people who have higher exposures to DIDP or are more likely or liable to be harmed by exposure. Such potentially exposed or susceptible subpopulations include the following:

- people who have greater exposure to DIDP at work;
- consumers, from infants to adults, who frequently use DIDP-containing products, toys, or articles in their homes;
- subsistence fishers and tribal populations whose diets include large amounts of fish; and
- people who are more susceptible to the risk of DIDP, specifically women of reproductive age, pregnant women, infants, and children.

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

DIDP presents an unreasonable risk of injury to human health. EPA did not identify risk of injury to the environment that would contribute to the unreasonable risk determination for DIDP.

Between release of the draft risk evaluation and finalization of the DIDP risk evaluation, EPA updated the risk determination to find that six conditions of use (COUs)² significantly contribute to the unreasonable risk of DIDP. These updates were based on new information identified by EPA, information provided by public commenters, and recommendations of the Science Advisory Committee on Chemicals ([SACC](#)). These changes stem from consideration of:

- multiple factors impacting occupational exposure during spray application;
- determination that developmental effects associated with acute exposure are not relevant to workers other than female workers of reproductive age; and
- identification of DIDP-containing products that could be spray applied that EPA previously was unaware of.

The following TSCA COUs significantly contribute to the unreasonable risk of injury to human health in female workers of reproductive age:

- Industrial use in adhesives and sealants
- Industrial use in paints and coatings
- Commercial use in:
 - Adhesives and sealants (including plasticizers in adhesives and sealants)
 - Paints and coatings (including surfactants in paints and coatings)
 - Lacquers, stains, varnishes, and floor finishes (as a plasticizer)
 - Inspection fluid/penetrant

The remaining 43 assessed COUs do *not* significantly contribute to unreasonable risk. For a complete list of COUs, see the executive summary of the [Risk Evaluation for DIDP](#). These 43 COUs account for the vast majority (~99%) of DIDP production volume in the United States.

How Will EPA Protect Human Health from DIDP 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 DIDP. Regulations could include banning or restricting DIDP for specific uses, worker protections, or labeling or recordkeeping requirements.

² 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](#)
- [Draft Risk Evaluation for Diisodecyl
Phthalate \(DIDP\)](#)