

Initial Risk-Based Prioritization of High Production Volume Chemicals

2,4,7,9-Tetramethyl-5-decyne-4,7-diol (CASRN 126-86-3) (9th CI and CA Index Name: 5-Decyne-4,7-diol, 2,4,7,9-tetramethyl-)

This document is based on screening-level characterizations done by EPA on the environmental fate, hazard, and exposure of the listed chemical. The information used by EPA includes data submitted under the HPV Challenge Program¹ and the 2006 Inventory Update Reporting (IUR)², and data publicly available through other selected sources³. This screening-level prioritization presents EPA's initial thinking regarding the potential risks presented by this chemical and future possible actions that may be needed. These initial characterization and prioritization documents do not constitute a final Agency determination as to risk, nor do they determine whether sufficient data are available to characterize risk. Rather, they are interim evaluations. Recommended actions may be considered by EPA in the future based on a relative judgment regarding this chemical in comparison with others evaluated under this program, and in light of the uncertainties presented by gaps in the available data that may be determined to exist. These evaluations contribute to meeting U.S. commitments under the chemicals cooperation work being done in North America⁴ through the EPA Chemical Assessment and Management Program (ChAMP)⁵.

Hazard and Fate Summary:

- **Human Health:** The acute toxicity of this chemical to rats exposed via oral, dermal and inhalation routes is low. This chemical is moderately irritating to skin and highly irritating to eyes. Repeated oral exposure of rats and dogs to this chemical did not produce systemic toxicity. In an oral one-generation study in rats, there was low reproductive toxicity, and low maternal and developmental toxicity. This chemical did not show a potential for inducing gene mutation or chromosomal aberrations.
- **Environment:** The acute toxicity of this chemical to fish, aquatic invertebrates and plants is low.
- **Persistence and Bioaccumulation:**
 - Available data indicate that this chemical has high persistence.
 - Available data indicate that this chemical has low bioaccumulation potential.

Exposure Summary:

- Both Confidential Business Information (CBI) and non-confidential information from IUR and other sources were used in developing this initial prioritization.
- **Production Volume:** This HPV chemical was manufactured and/or imported in the U.S. with an aggregated production volume in the range of 10 to 50 million pounds in 2005.
- **Uses:** The industrial processing and uses reported in the IUR are claimed as confidential. The High Production Volume Challenge submission for this chemical states that it is used

¹ US EPA, HPV Challenge Program information: <http://epa.gov/hpv/>.

² US EPA, IUR information: <http://www.epa.gov/oppt/iur/index.htm>.

³ US EPA, Information on additional public databases used: <http://www.epa.gov/hpvis/pubdtsum.htm>.

⁴ US EPA, U.S. Commitments to North American Chemicals Cooperation:
<http://www.epa.gov/hpv/pubs/general/sppframework.htm>.

⁵ US EPA, ChAMP information: <http://www.epa.gov/champ/>.

as an industrial defoaming nonionic surfactant in the coatings, ink and adhesives industries, or as a chemical intermediate. The Hazardous Substances Data Bank (HSDB) indicates that additional uses of this chemical are as a defoamer in paints, coatings, adhesives and dye production; and as a wetting agent in pesticide formulations, rinsing aids, viscosity reducers, detergent formulations and penetrating agents.

- **General Population and Environment:** EPA identifies a high potential that the general population and the environment might be exposed to this chemical. There is potential for environmental release during manufacturing, processing, and use of this chemical. Available data indicate that it has high persistence in the environment and low bioaccumulation potential.
- **Workers:** EPA identifies a high relative ranking for potential worker exposure based on the potential for significant dermal exposure and for inhalation of mists and/or particulates by a large number of workers in commercial settings, including spray application of products containing the subject substance, a relatively high number of industrial processing and uses, and a relatively high number of potentially exposed workers (> 1000 workers) at manufacturing, industrial processing and use sites.
- **Consumers:** EPA identifies a high potential that consumers might be exposed based on the use of products containing this chemical. Consumer uses were reported but specific information was claimed to be CBI. There is also potential for exposure to consumers based on information from public data sources. This chemical may be used in paints, coatings, adhesives and dye production (HSDB). Depending on the product, there may be dermal and/or inhalation exposures to consumers from vapors, mists, or particulates.
- **Children:** EPA identifies a medium potential that children might be exposed. No uses in products intended to be used by children were reported in the IUR, nor were any found in other data sources. However, there may be potential exposure of children through the household use of some consumer products, e.g., paints, adhesives.

Risk Characterization Summary:

- **Potential Risk to Aquatic Organisms from Environmental Releases:** *LOW CONCERN.* EPA identifies a high potential that aquatic organisms might be exposed from environmental releases. This chemical has high persistence and low bioaccumulation. These characteristics in combination with the low toxicity to fish, aquatic invertebrates and plants indicate a low concern to aquatic organisms from environmental releases.
- **Potential Risk to the General Population from Environmental Releases:** *LOW CONCERN.* EPA identifies a high potential that the general population might be exposed from environmental releases. The potential human health hazard is expected to be low due to the lack of specific toxicity in animals following repeat exposures. The available information suggests a low concern for potential risk to the general population from environmental releases.
- **Potential Risk to Workers:** *LOW CONCERN.* EPA identifies a high relative ranking for potential worker exposure. The potential human health hazard is expected to be low due to the lack of specific toxicity in animals following repeated exposures. There is potential for moderate to high skin and eye irritation; however, adherence to standard good industrial hygiene practices (gloves, respirators, goggles, and other protective clothing) to prevent irritation would limit the exposure to workers. The available information suggests a low concern for potential risks to workers.

- Potential Risk to Consumers from Known Uses: *LOW CONCERN*. EPA identifies a high potential that consumers might be exposed. The potential human health hazard is expected to be low due to the lack of specific toxicity in animals following repeated exposures. The available information suggests a low concern for potential risks to consumers. However, this chemical has moderate to high potential for skin and eye irritation in animal studies; therefore, there may be concern for skin and eye irritation.
- Potential Risk to Children: *LOW CONCERN*. EPA identifies a medium potential that children might be exposed. There are no uses in products specifically intended to be used by children. Exposure to children, however, may be expected to occur through the household use of some consumer products. The potential human health hazard is expected to be low due to low toxicity in rats following exposure during early life-stages. The available information suggests a low concern for potential risks to children.

Regulatory and Related Information Summary:

- This chemical is listed on the TSCA Inventory. It is not otherwise regulated under TSCA.
- This chemical is categorized under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) as an inert ingredient of unknown toxicity.

Assumptions and Uncertainties:

- EPA has no quantitative information on releases of this chemical, and assumes potential exposures based on reported uses.

Rationale Leading To Prioritization Decision:

- Available data suggest a low hazard to the environment and to humans in all potential exposure groups.

Prioritization Decision:

- LOW PRIORITY - Followup action not suggested at this time.

Supporting Documentation:

Screening-Level Risk Characterization: September 2008

Screening-Level Hazard Characterization: September 2008

Screening-Level Exposure Characterization: September 2008