

## Initial Risk-Based Prioritization of High Production Volume Chemicals

### *m*-Diisopropenylbenzene (CASRN 3748-13-8) (9<sup>th</sup> CI and CA Index Name: Benzene, 1,3-bis(1-methylethenyl)-)

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 Program<sup>1</sup> and the 2006 Inventory Update Reporting (IUR)<sup>2</sup>, and data publicly available through other selected sources<sup>3</sup>. 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 America<sup>4</sup> through the EPA Chemical Assessment and Management Program (ChAMP)<sup>5</sup>.

#### **Hazard and Fate Summary:**

- **Human Health:** Available data indicate the potential acute health hazard is low by the oral and dermal routes and moderate by the inhalation route. Oral repeated-dose toxicity studies showed low hazard while an inhalation repeated-dose toxicity study showed moderate hazard. This chemical is slightly irritating to the eyes and skin and is a skin sensitizer.
- **Environment:** Available data indicate the acute toxicity of this chemical to fish, aquatic invertebrates and aquatic plants is moderate.
- **Persistence and Bioaccumulation:**
  - Available data indicate that this chemical has moderate persistence.
  - Available data indicate that this chemical has moderate 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 chemical is an HPV chemical manufactured and/or imported in the U.S. with an aggregated production volume in the range of 1 to 10 million pounds in 2005.
- **Uses:** Non-confidential IUR information for this chemical indicates that it is used as an intermediate in the manufacture of other basic organic chemicals. The HPV Challenge

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

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

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

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

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

Program submission for this chemical states that the primary use is as an industrial intermediate in the production of diisocyanate monomer and a minor use is as an intermediate in optical products.

- General Population and Environment: Based on environmental fate, known uses, and the Agency's expert judgment, EPA identifies a medium potential that the general population and the environment may be exposed through releases to air, water, and land.
- Workers: EPA identifies a low relative ranking for potential worker exposure based primarily on the moderate volatility, the uses of the chemical, the production volume, and the number of potentially exposed workers.
- Consumers: No consumer uses are reported in the IUR submissions, nor were any found in other data sources. EPA identifies a low potential that consumers may be exposed.
- Children: No uses in products intended to be used by children were reported in the IUR, nor were any found in other data sources. EPA identifies a low potential that children might be exposed.

### **Risk Characterization Summary:**

- Potential Risk to Aquatic Organisms from Environmental Releases: *MEDIUM CONCERN*. EPA identifies a medium potential that aquatic organisms might be exposed from environmental releases. This chemical has a medium potential for bioaccumulation and persistence. These characteristics in combination with toxicity to fish, aquatic invertebrates, and aquatic plants suggest a medium concern for potential risk to aquatic organisms from environmental releases.
- Potential Risk to the General Population from Environmental Releases: *LOW CONCERN*. EPA identifies a medium potential that the general population might be exposed from environmental releases. The potential human health hazard is expected to be low from oral exposure and medium from inhalation exposure. Based on rapid photodegradation in air, EPA assumes that air exposures to the general population will be low. Therefore, 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 low relative ranking for exposure to workers. The potential health hazard is expected to be medium by the inhalation route. The chemical is slightly irritating to the eyes and skin and is a skin sensitizer. Adherence to standard good industrial hygiene practices (gloves, respirators, goggles, and other protective clothing) will limit the exposure to workers and should be particularly followed by workers involved in placing this chemical in drums for shipment off-site (involving only 6% of the total production volume). Therefore, the available information suggests a low concern for potential risks to workers.
- Potential Risk to Consumers from Known Uses: *LOW CONCERN*. EPA identifies a low potential that consumers might be exposed. Therefore, the available information suggests a low concern for potential risks to consumers.
- Potential Risk to Children: *LOW CONCERN*. EPA identifies a low potential that children might be exposed. There was no toxicity in an animal study with exposures during early life stages. Therefore, the available information suggests a low concern for potential risk to children.

**Regulatory and Related Information Summary:**

- This chemical is listed on the TSCA Inventory. It is not otherwise regulated by EPA.

**Assumptions and Uncertainties:**

- EPA has no information on releases of this chemical, and assumes potential exposures based on reported uses.
- EPA assumes that appropriate engineering controls and good industrial hygiene practices (gloves, respirators, goggles, and other protective clothing) are followed during drumming operations.

**Rationale Leading To Prioritization Decision:**

- Available data suggest a concern for potential risks to aquatic organisms. This concern is driven by moderate toxicity data for aquatic organisms and the environmental fate characteristics of medium persistence and bioaccumulation potential combined with assumptions about the potential for environmental exposures. Information concerning releases to air, water and land and resultant exposures would be useful in determining the extent of potential concern for risks to aquatic organisms and the general population from environmental releases.
- Available data suggests that rapid photodegradation in air would mitigate concerns for risks to the general population and adherence to standard good industrial hygiene practices would mitigate concerns for risks to workers.
- Available information suggests that this chemical is not present in consumer products or products intended for use by children, thus mitigating concern for risks to these populations.

**Prioritization Decision:**

- **MEDIUM PRIORITY, POTENTIAL CONCERN:** In order to further evaluate the medium concerns for potential risks to aquatic organisms from environmental releases of this chemical, EPA has identified next steps involving efforts to develop a better understanding of exposure and use of this chemical. Examples of information that would assist EPA in its analysis include, but are not limited to:
  - Information concerning potential releases to air, water and land from manufacturing, use and disposal of the chemical and products containing the chemical; and
  - Other information pertinent to exposures to and uses of this chemical.

As an initial step in developing this understanding, companies that manufacture, process, or use this chemical are encouraged to provide available information on a voluntary and non-confidential basis.

**Supporting Documentation:**

**Screening-Level Risk Characterization: September 2008**

**Screening-Level Hazard Characterization: September 2008**

**Screening-Level Exposure Characterization: September 2008**