

Initial Risk-Based Prioritization of High Production Volume Chemicals

Methane Sulfonic Acid (CAS No. 75-75-2) (9th CI Name: Methane Sulfonic Acid)

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 Summary:

- **Human Health:** Available data indicate that the potential health hazard of this chemical is moderate based on portal-of-entry effects following repeated inhalation exposures. It is corrosive to the skin and eye.
- **Environment:** Available data indicate that the potential acute hazard of this chemical is low to fish and aquatic plants and moderate to aquatic invertebrates.
- **Persistence and Bioaccumulation:**
 - Available data indicate that this chemical has low 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 chemical has an aggregated production and/or import volume in the United States in the range of 1 to 10 million pounds.
- **Uses:** Non-confidential information in the IUR indicated that the chemical is processed industrially as a reactant, incorporated into formulations, and used for a variety of functions, including in plating agents and metal surface treating agents, for electronic components manufacturing, in photosensitive chemicals, in soap and cleaning compound manufacturing, and with solvents for cleaning or degreasing, among others. For

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

² US EPA, IUR Reporting 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/>.

commercial and consumer uses, the chemical is in electrical and electronic products, metal products, rubber and plastic products, and soaps and detergents.

- General Population and Environment: Based on use information, it is likely that there would be some releases to water or air during manufacturing, processing, and use. This chemical was found in measurable amounts in air, Antarctic ice, marine algae, and salt marsh plants; the latter two are natural sources of dimethyl sulfide, which is photochemically oxidized to this chemical. EPA identifies a high potential that the general population and the environment may be exposed to this chemical, although the degree of exposure that can be attributed to TSCA uses rather than to natural occurrence cannot be determined from the references examined.
- Workers: EPA identifies a medium relative ranking for potential worker exposure. This relative ranking is based mainly on the corrosive and moisture-sensitive nature of the chemical, which would likely require workers to wear adequate personal protective equipment (PPE) during exposures to the chemical in concentrated forms. The ranking is also based on uncertainty regarding the extent of PPE used by workers who may be exposed at lower concentrations. This chemical does not have OSHA Permissible Exposure Limits (PELs).
- Consumers: IUR data and information from public data sources indicate that this chemical is found in household products. Depending on the consumer product, there may be dermal and/or inhalation exposures to consumers from vapors, mists, or particulates. EPA identifies a high potential that consumers may be exposed to this chemical because of its presence in consumer products.
- Children: No uses in products specifically intended to be used by children were reported in the IUR, nor were any found in other data sources. Exposures to children, however, may be expected to occur through the household use of some consumer products. Therefore, EPA identifies a medium potential that children may be exposed.

Risk Characterization Summary:

- Potential Risk to Aquatic Organisms from Environmental Releases: *LOW/MEDIUM CONCERN*. EPA identifies a high potential that aquatic organisms may be exposed from environmental releases. This chemical has low persistence and low bioaccumulation. These characteristics in combination with the low acute toxicity for fish and low acute aquatic hazard for plants indicate a low concern for potential risk to fish and aquatic plants. These characteristics in combination with a moderate acute aquatic hazard for invertebrates suggest a medium concern for potential risk to aquatic invertebrates.
- Potential Risk to the General Population from Environmental Releases: *LOW CONCERN*. EPA identifies a high potential that the general population may be exposed to the chemical from environmental releases. The potential human health hazard is expected to be moderate due to toxicity in animals following repeated exposures. However, this chemical is highly corrosive and therefore potential exposures would tend to be self-limiting. The moderate hazard, environmental fate characteristics of low persistence and low bioaccumulation, and self-limiting exposure suggest a low concern for potential risk to the general population from environmental releases.
- Potential Risk to Workers: *LOW CONCERN*. EPA identifies a medium relative ranking for worker exposures to this chemical. The potential human health hazard is expected to be moderate due to toxicity in animals following repeated exposures. The chemical is

corrosive to the skin and eye in animal studies; however, adherence to standard good industrial hygiene practices to prevent irritation would limit the exposure of workers. Therefore, the available information suggests a low concern for potential risk to workers.

- Potential Risk to Consumers from Known Uses: *LOW CONCERN*. EPA identifies a high potential that consumers may be exposed. The potential human health hazard is expected to be moderate. However, this chemical is highly corrosive and therefore potential exposures would tend to be self-limiting. The available information suggests a low concern for potential risk to consumers.
- Potential Risk to Children: *LOW CONCERN*. No uses in products specifically intended to be used by children were reported in the IUR, nor were any found in other data sources. Exposures to children, however, may be expected to occur through the household use of some consumer products. However, the hazard concern is for the corrosive nature of this chemical, and consumer products that children may come into contact with would likely not contain this chemical at corrosive levels.

Regulatory and Related Information Summary:

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

Assumptions and Uncertainties:

- EPA has no quantitative information on releases of this chemical, and assumes potential exposures based on reported uses and detection in environmental samples.
- In the environment there are natural sources of dimethyl sulfide, which is photochemically oxidized to this chemical. Therefore, the degree of exposure that can be attributed to industrial uses is uncertain.
- There is uncertainty regarding the extent of personal protective equipment used by workers who may be exposed at lower concentrations.

Rationale Leading To Prioritization Decision:

- Hazard communication and standard industrial hygiene practices, if properly followed, may be sufficient to address concerns for occupational exposures.
- Although the potential human health hazard is expected to be moderate, this chemical is highly corrosive and therefore potential exposures would tend to be self-limiting. Consumer products would not be likely to contain the chemical at corrosive levels.
- Although the potential environmental hazard is moderate for invertebrates (low for fish and aquatic plants), the low persistence and bioaccumulation as well as the difficulty of separating man-made from natural sources reduces the overall priority.

Prioritization Decision:

- **LOW PRIORITY** - Follow-up action not suggested at this time.

Supporting Documentation:

Screening-Level Risk Characterization: July 2008

Screening-Level Hazard Characterization: July 2008

Screening-Level Exposure Characterization: July 2008