TCI AMERICA

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	**Corrosive to eyes and skin on contact.** **Toxic compound, do not ingest or inhale. Avoid all contact with this material.** **Hygroscopic -- keep container tightly sealed.** **Refrigerate.**	

Section I. Chemical Product and Company Identification

Chemical Name: **Methanesulfonic Acid**
[for HPLC]

Catalog Number: M2059

Synonym: Methanesulfonic acid (CA INDEX NAME); Methylsulfonic Acid; Sulfomethane

Chemical Formula: CH_4O_3S

CAS Number: 75-75-2

Supplier: TCI America
9211 N. Harborgate St.
Portland OR
1-800-423-8616

In case of Emergency Call: **Chemtrec®**
(800) 424-9300 (U.S.)
(703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Methanesulfonic Acid [for HPLC]	75-75-2	Min. 99.0 (T)	Not available.	Rat LD_{50} (oral) 200 mg/kg Quail LD_{50} (oral) 1 gm/kg Guinea Pig LD_{50} (dermal) >2 gm/kg

Section III. Hazards Identification

Acute Health Effects

Corrosive to skin, eyes, and respiratory system. Liquid or spray mist may produce tissue damage, particularly in mucous membranes of the eyes, mouth and respiratory tract. Skin contact may produce burns. Eye contact can result in corneal damage or blindness. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Corrosive materials may cause serious injury if ingested.
Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Chronic Health Effects

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
DEVELOPMENTAL TOXICITY: Not available.
Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section IV. First Aid Measures

Eye Contact

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Inhalation

If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.

Ingestion

DO NOT INDUCE VOMITING. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Section V. Fire and Explosion Data

Flammability: May be combustible at high temperature.

Auto-Ignition: 535°C (995°F)

Flash Points: 233°C (451.4°F)

Flammable Limits: LOWER: 11.4% UPPER: 24.3%

Combustion Products: These products are toxic carbon oxides (CO, CO_2), sulfur oxides (SO_x).

Fire Hazards: Not available.

Explosion Hazards: Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
Consult with local fire authorities before attempting large scale fire-fighting operations.

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Emergency phone number (800) 424-9300

Section VI. Accidental Release Measures

Spill Cleanup Instructions

Corrosive material. Toxic material. Hygroscopic material.
Stop leak if without risk. If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: Absorb with DRY earth, sand or other non-combustible material. DO NOT get water inside container. Absorb with an inert material and put the spilled material in an appropriate waste disposal. DO NOT touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information

CORROSIVE. TOXIC. HYGROSCOPIC. REFRIGERATE. Keep locked up. Keep container dry. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively.
Always store away from incompatible compounds such as oxidizing agents, reducing agents, metals, alkalis (bases), moisture.

Section VIII. Exposure Controls/Personal Protection

Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.

Personal Protection

Face shield. Lab coat. Vapor respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits

Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid. (Clear, colorless ~ light yellow.)	Solubility	Miscible with water. Soluble in alcohol, ether. Slightly soluble in benzene. Very slightly soluble in toluene. Insoluble in hexane.
Specific Gravity	1.48 (water=1)		
Molecular Weight	96.11	Partition Coefficient	LOG P_{ow}: -2.38
Boiling Point	122°C (251.6°F) @ 1 mmHg	Vapor Pressure	0.057 Pa (@ 25°C)
Melting Point	18°C (64.4°F) (freezing point)	Vapor Density	3.32 (Air = 1)
Refractive Index	1.43	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
Viscosity	Not available.	Taste	Not available.

Section X. Stability and Reactivity Data

Stability

This material is stable if stored under proper conditions. (See Section VII for instructions)

Conditions of Instability

Avoid excessive heat and light. Hygroscopic; keep container tightly closed. Refrigerate.

Incompatibilities

Reactive with oxidizing agents, reducing agents, metals, alkalis (bases), amines, moisture.

Section XI. Toxicological Information

RTECS Number

PB1140000

Routes of Exposure

Eye Contact. Ingestion. Inhalation. Skin contact.

Toxicity Data

Rat LD_{50} (oral) 200 mg/kg
Quail LD_{50} (oral) 1 gm/kg
Guinea Pig LD_{50} (dermal) >2 gm/kg

Chronic Toxic Effects

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
DEVELOPMENTAL TOXICITY: Not available.
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Acute Toxic Effects	Corrosive to skin, eyes, and respiratory system. Liquid or spray mist may produce tissue damage, particularly in mucous membranes of the eyes, mouth and respiratory tract. Skin contact may produce burns. Eye contact can result in corneal damage or blindness. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Corrosive materials may cause serious injury if ingested. Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Methanesulfonic acid is formed naturally from the atmospheric photochemical oxidation of dimethyl sulfide, from marine algae and salt marsh plants. Methanesulfonic acid's natural production and use as a catalyst in polymerization, alkylation, and esterification reactions and as a solvent results in its release to the environment through various waste streams. Methanesulfonic acid should have very high mobility in soil. Volatilization of methanesulfonic acid may occur from dry soils but not from moist soils because of the estimated low Henry's Law constant. In water, methanesulfonic acid is expected to be essentially non-volatile. Bioconcentration, adsorption to sediment, and hydrolysis are not expected to be important fate processes in aquatic systems. It was determined that many bacterial types can degrade methanesulfonic acid through diverse routes and at different rates, although specifics were not given. Methanesulfonic acid will exist in the vapor phase in the ambient atmosphere. If released to the atmosphere, it will degrade by reaction with photochemically produced hydroxyl radicals with an estimated half-life of approximately 58 days. Removal of methanesulfonic acid from the atmosphere can occur though wet and dry deposition. Occupational exposure to methanesulfonic acid can occur through dermal contact and general population exposure through inhalation of air.

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

Section XIV. Transport Information

DOT Classification	DOT Class 8: Corrosive material
PIN Number	UN2586
Proper Shipping Name	Alkylsulfonic acids, liquid
Packing Group (PG)	III
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS E: Corrosive liquid. On DSL.
EINECS Number (EEC)	200-898-6
EEC Risk Statements	R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R34- Causes burns.
Japanese Regulatory Data	ENCS No. 2-1582

Section XVI. Other Information

Version 1.0
Validated on 12/4/2009.
Printed 12/4/2009.

Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.