

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
  	Flammable material; avoid heat and sources of ignition. Toxic compound, do not ingest or inhale. Avoid all contact with this material. Corrosive to eyes and skin on contact. Lachrymator. Light sensitive. Refrigerate.	

Section I. Chemical Product and Company Identification

Chemical Name	Methacrolein (stabilized with HQ)		
Catalog Number	M0078	Supplier	TCI America 9211 N. Harbortgate St. Portland OR 1-800-423-8616
Synonym	Methacrylaldehyde		
Chemical Formula	CH ₂ :C(CH ₃)CHO		
CAS Number	78-85-3	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
Methacrolein (stabilized with HQ)	78-85-3	Min. 80.0%(GC)	Not available.	Rat LD ₅₀ (oral) 140 mg/kg Rabbit LD ₅₀ (dermal) 430 uL/kg Cat LC ₅₀ (inhalation) 810 mg/m ³ /2H

Section III. Hazards Identification

Acute Health Effects	Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. 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. 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	Flammable.	Auto-Ignition	295 °C (563 °F)
Flash Points	-15 °C (5 °F).	Flammable Limits	LOWER: 2.6%
Combustion Products	These products are toxic carbon oxides (CO, CO ₂).		
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			

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Emergency phone number (800) 424-9300

Flammable liquid.
 SMALL FIRE: Use DRY chemical powder.
 LARGE FIRE: Use alcohol foam, water spray or fog.
 Consult with local fire authorities before attempting large scale fire-fighting operations.

Section VI. Accidental Release Measures

Spill Cleanup Instructions
 Flammable Material. Toxic Material. Corrosive Material. Lachrymatory. Light Sensitive Material.
 Keep away from heat. Mechanical exhaust required. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT get water inside container. 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. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information
 FLAMMABLE. TOXIC. CORROSIVE. LACHRYMATORY. LIGHT SENSITIVE. REFRIGERATE. Keep locked up.. Keep container dry. Keep away from heat. Mechanical exhaust required. 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, acids, alkalis (bases).

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. (Colorless to Light Yellow Clear.)	Solubility	Soluble in water. Miscible in ethanol, ether.
Specific Gravity	0.84 (water=1)		
Molecular Weight	70.09	Partition Coefficient	Not available.
Boiling Point	68°C (154.4°F)	Vapor Pressure	16 kPa (@ 20°C)
Melting Point	-81°C (-113.8°F)	Vapor Density	2.42 (Air = 1)
Refractive Index	1.412 to 1.416	Volatility	Not available.
Critical Temperature	Not available.	Odor	Characteristic.
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.

Incompatibilities
 Reactive with strong oxidizing agents, strong reducing agents, strong acids, strong alkalis (bases), amines, peroxides.

Section XI. Toxicological Information

RTECS Number
 OZ2625000

Routes of Exposure
 Eye Contact. Ingestion. Inhalation. Skin contact.

Toxicity Data
 Rat LD₅₀ (oral) 140 mg/kg
 Rabbit LD₅₀ (dermal) 430 uL/kg
 Cat LC₅₀ (inhalation) 810 mg/m³/2H

Chronic Toxic 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.

Acute Toxic Effects
 Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. 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.
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Section XII. Ecological Information

Ecotoxicity Not available.

Environmental Fate Methacrolein's former production and use in copolymers, resins, and as an intermediate for the production of methacrylonitrile or methacrylic acid may have resulted in its release to the environment through various waste streams. It has been detected in the emissions from automobile exhaust, liquid floor wax, steel protective paints, and from trees. It also has been identified in urban and rural air samples, Chickpea seed, and in human adipose tissue. If released to soil, methacrolein will have very high mobility. Volatilization of methacrolein will be important from moist and dry soil surfaces. Insufficient data are available to determine the rate or importance of biodegradation of methacrolein in soil or water. If released to water, methacrolein may not adsorb to suspended solids and sediment. Methacrolein may volatilize from water surfaces with estimated half-lives for a model river and model lake of about 5 hours and 4 days, respectively. An estimated BCF value of 1.4 suggests that methacrolein will not bioconcentrate in aquatic organisms. If released to the atmosphere, methacrolein will exist in the vapor phase. Vapor-phase methacrolein is degraded in the atmosphere by reaction with photochemically produced hydroxyl radicals with an estimated half-life of about 11.5 hours. Vapor-phase methacrolein is also degraded in the atmosphere by reaction with ozone with an estimated half-life of about 10.5 days. Methacrolein reacts very quickly in air with oxygen forming peroxides and acids. Methacrolein is formed from the gas-phase reaction of ozone with isoprene. Exposure to methacrolein may occur through dermal contact and inhalation.

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 3: Flammable liquid.
DOT Class 6.1: Toxic material.

PIN Number UN2396

Proper Shipping Name Methacryaldehyde, stabilized

Packing Group (PG) II

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 B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).
CLASS E: Corrosive liquid.
On DSL.

EINECS Number (EEC) 201-150-1

EEC Risk Statements R10- Flammable.
R18- In use, may form flammable/explosive vapor-air mixture.
R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.
R34- Causes burns.

Japanese Regulatory Data ENCS No. (2)-522

Section XVI. Other Information

Version 1.0
Validated on 4/19/2007.
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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.