

# Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
  	<p>Corrosive to eyes and skin on contact.                      Toxic compound, do not ingest or inhale. Avoid all contact with this material.                      Combustible material; avoid heat and sources of ignition.                      DANGER, MAY CAUSE CANCER.                      POSSIBLE CARCINOGEN. MINIMIZE EXPOSURE.</p>	

## Section I. Chemical Product and Company Identification

Chemical Name	<b>Acrylic Acid</b> (stabilized with MEHQ)		
Catalog Number	A0141	Supplier	TCI America 9211 N. Harborsgate St. Portland OR 1-800-423-8616
Synonym	2-Propenoic Acid		
Chemical Formula	CH <sub>2</sub> :CHCOOH		
CAS Number	79-10-7	In case of Emergency Call	<b>Chemtrec®</b> <b>(800) 424-9300 (U.S.)</b> <b>(703) 527-3887 (International)</b>

## Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Acrylic Acid (stabilized with MEHQ)	79-10-7	Min. 99.0 (GC)	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen. This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.	Rat LD <sub>50</sub> (oral) 33500µg/kg Rabbit LD <sub>50</sub> (dermal) 280µl/kg Rat LD <sub>50</sub> (intraperitoneal) 22mg/kg

## Section III. Hazards Identification

Acute Health Effects	<p>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.</p> <p>Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death.</p> <p>Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.</p>
Chronic Health Effects	<p><b>CARCINOGENIC EFFECTS</b> : Not available.  <b>MUTAGENIC EFFECTS</b> : Not available.  <b>TERATOGENIC EFFECTS</b> : Tumorigenic Effects:                      Mouse TDLo (Subcutaneous) 2912 mg/kg/52 weeks, intermittent.                      Toxic Effects:                      Tumorigenic - Equivocal tumorigenic agent by RTECS criteria.                      Tumorigenic - Tumors at site of application.                      Mouse TDLo (Dermal) 37440 mg/kg/78 weeks, intermittent.                      Toxic Effects:                      Tumorigenic - Carcinogenic by RTECS criteria.                      Blood - Leukemia.  <b>DEVELOPMENTAL TOXICITY:</b> Reproductive Effects:                      Rat TDLo (Intraperitoneal) 7329 µg/kg, female 5-15 days of pregnancy.                      Toxic Effects:                      Effects on Embryo or Fetus - Fetotoxicity.                      Specific Developmental Abnormalities - Musculoskeletal system.                      Rat TDLo (oral) 169 gm/kg, male 13 weeks and 13 weeks prior to mating - 3 weeks after birth prior to mating.                      Toxic Effects:                      Paternal Effects - Testes, epididymis, sperm duct.                      Effects on Newborn - Growth statistics.                      Effects on Newborn - Physical.                      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.</p>

**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. SEEK IMMEDIATE MEDICAL ATTENTION in case of ingestion of a radioactive material.

**Section V. Fire and Explosion Data**

Flammability	Combustible.	Auto-Ignition	438 °C (820.4 °F)
Flash Points	54.44 °C (130 °F).	Flammable Limits	LOWER: 2% UPPER: 13.7%
Combustion Products	These products are toxic carbon oxides (CO, CO <sub>2</sub> ).		
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	Combustible liquid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Consult with local fire authorities before attempting large scale fire-fighting operations.		

**Section VI. Accidental Release Measures**

Spill Cleanup Instructions	Toxic material. Corrosive material. Combustible material. Possible carcinogenic material. Danger may cause cancer. 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.
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**Section VII. Handling and Storage**

Handling and Storage Information	TOXIC. CORROSIVE. COMBUSTIBLE. POSSIBLE CARCINOGEN. DANGER MAY CAUSE CANCER. 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, alkalis (bases).
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**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. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent.
	
Exposure Limits	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen. This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.

**Section IX. Physical and Chemical Properties**

Physical state @ 20°C	Liquid. (Clear, colorless.)	Solubility	Miscible with water, alcohol, ether, chloroform.
Specific Gravity	1.051 (water=1)		
Molecular Weight	72.06	Partition Coefficient	Not available.
Boiling Point	139 °C (282.2 °F)	Vapor Pressure	0.5 kPa (@ 25 °C)
Melting Point	13 °C (55.4 °F) (freezing point)	Vapor Density	2.5 (Air = 1)
Refractive Index	1.4224 @ 20 °C	Volatility	Not available.
Critical Temperature	Not available.	Odor	Acridic.
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 alkalis (bases).

**Section XI. Toxicological Information**

RTECS Number	AS4375000
Routes of Exposure	Eye Contact. Ingestion. inhalation. Skin contact.
Toxicity Data	Rat LD <sub>50</sub> (oral) 33500µg/kg Rabbit LD <sub>50</sub> (dermal) 280µl/kg Rat LD <sub>50</sub> (intraperitoneal) 22mg/kg
Chronic Toxic Effects	<b>CARCINOGENIC EFFECTS</b> : Not available. <b>MUTAGENIC EFFECTS</b> : Not available. <b>TERATOGENIC EFFECTS</b> : Tumorigenic Effects: Mouse TDLo (Subcutaneous) 2912 mg/kg/52 weeks, intermittent. Toxic Effects: Tumorigenic - Equivocal tumorigenic agent by RTECS criteria. Tumorigenic - Tumors at site of application. Mouse TDLo (Dermal) 37440 mg/kg/78 weeks, intermittent. Toxic Effects: Tumorigenic - Carcinogenic by RTECS criteria. Blood - Leukemia. <b>DEVELOPMENTAL TOXICITY:</b> Reproductive Effects: Rat TDLo (Intraperitoneal) 7329 µg/kg, female 5-15 days of pregnancy. Toxic Effects: Effects on Embryo or Fetus - Fetotoxicity. Specific Developmental Abnormalities - Musculoskeletal system. Rat TDLo (oral) 169 gm/kg, male 13 weeks and 13 weeks prior to mating - 3 weeks after birth prior to mating. Toxic Effects: Paternal Effects - Testes, epididymis, sperm duct. Effects on Newborn - Growth statistics. Effects on Newborn - Physical. 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	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	Acrylic acid's production and use in the manufacture of plastics, paint formulations, leather finishings, paper coatings, and in medicine and dentistry for dental plates, artificial teeth, and orthopedic cement may result in its release to the environment through various waste streams. Acrylic acid has also been identified in 9 species of Chlorophyceae algae, 10 species of Rhodophyceae algae and in the rumen fluid of sheep. If released to air, a vapor pressure of 3.97 mm Hg at 25 deg C indicates acrylic acid will exist solely as a vapor in the ambient atmosphere. Vapor-phase acrylic acid will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 2 days. Because the structurally similar compound ethyl acrylate does not absorb light in the environmental UV spectrum (>290 nm), acrylic acid is not expected to directly photolyze. If released to soil, acrylic acid is expected to have very high mobility based upon a Koc of 43. A pKa of 4.25 indicates acrylic acid will exist almost entirely in the anionic form at pH values of 5 to 9; the anionic form is not expected to volatilize. Volatilization from moist soil surfaces is expected to be slow based upon a Henry's Law constant of 3.2X10 <sup>-7</sup> atm-cu m/mole. Acrylic acid may potentially volatilize from dry soil surfaces based upon its vapor pressure. Acrylic acid, formed from hydrolysis of acrylamide added to soil, was totally degraded within 15 days of its formation. If released into water, acrylic acid is not expected to adsorb to suspended solids and sediment in the water column based upon the estimated Koc. Biodegradation under both aerobic and anaerobic conditions is expected to occur; it reached 68% of its theoretical BOD in 2 weeks using an activated sludge inoculum and 71% of acrylic acid was mineralized in a 42 day anaerobic screening study using a sewage seed inoculum. Volatilization from water surfaces is expected to occur slowly based upon this compound's estimated Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 96 days and 700 days, respectively. Acrylic acid's pKa indicates that it will exist almost entirely in the anionic form at environmental pHs and therefore volatilization from water surfaces is not expected to be an important fate process. An estimated BCF of 1 suggests the potential for bioconcentration in aquatic organisms is low. Acrylic acid is stable to hydrolysis at pH 3, 7, and 11. Occupational exposure to acrylic acid may occur through inhalation and dermal contact with this compound at workplaces where acrylic acid is produced or used. The general population may be exposed to acrylic acid via contact with resin, dental products and consumer products such as floor polish which may contain small amounts this compound.

**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.
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**Section XIV. Transport Information**

DOT Classification	CLASS 8: Corrosive material. CLASS 3: Combustible liquid.
PIN Number	UN2218
Proper Shipping Name	Acrylic acid, stabilized
Packing Group (PG)	II
DOT Pictograms	

**Section XV. Other Regulatory Information and Pictograms**

TSCA Chemical Inventory (EPA)	This compound is <b>ON</b> the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	CLASS B-3: Combustible liquid with a flash point between 37.8 °C (100 °F) and 93.3 °C (200 °F). CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS E: Corrosive liquid.
EINECS Number (EEC)	201-177-9
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. R45- May cause cancer. R46- May cause heritable genetic damage. R47- May cause birth defects.
Japanese Regulatory Data	Not available.

**Section XVI. Other Information**

**Version 1.0**  
**Validated on 4/18/2007.**  
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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, household, 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.