

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
    	<p><b>Highly toxic compound, do not ingest or inhale. Avoid all contact with this material. [Inhalation Hazard]</b></p> <p><b>Flammable material; avoid heat and sources of ignition.</b></p> <p><b>Corrosive to eyes and skin on contact.</b></p> <p><b>CARCINOGEN. MINIMIZE EXPOSURE.</b></p> <p><b>Lachrymator.</b></p> <p><b>Vesicant.</b></p> <p><b>This material is toxic to aquatic organisms and may cause long term adverse effects to the aquatic environment.</b></p> <p><b>Heat and light sensitive material.</b></p>	

## Section I. Chemical Product and Company Identification

Chemical Name	<b>Acrylonitrile</b> (Stabilized with MEHQ)		
Catalog Number	A0146	Supplier	TCI America 9211 N. Harborsgate St. Portland OR 1-800-423-8616
Synonym	Propenenitrile		
Chemical Formula	CH <sub>2</sub> :CHCN		
CAS Number	107-13-1	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
Acrylonitrile (Stabilized with MEHQ)	107-13-1	Min. 99.0(GC)	OSHA PEL Ceiling: 10ppm OSHA TLV-TWA: 2ppm This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.	Rat LC <sub>50</sub> (inhalation) 333ppm/4H Rat LD <sub>50</sub> (oral) 78mg/kg Rabbit LD <sub>50</sub> (dermal) 63mg/kg

## Section III. Hazards Identification

Acute Health Effects	<p>Highly toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death.</p> <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>Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.</p>
Chronic Health Effects	<p><b>CARCINOGENIC EFFECTS</b> : Carcinogenic by RTECS criteria.</p> <p><b>MUTAGENIC EFFECTS</b> : Not available.</p> <p><b>TERATOGENIC EFFECTS</b> : TUMORIGENIC EFFECTS: Rat TCl<sub>o</sub> (Inhalation), 5ppm/52 Weeks intermittent.</p> <p>Toxic Effects: Tumorigenic- Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages- Tumors. Rat TD (Oral), 3640mg/kg/52 Weeks continuous.</p> <p>Toxic Effects: Tumorigenic- Neoplastic by RTECS criteria. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste)- Tumors. Gastrointestinal- Tumors. Rat TDLo (Oral), 2490mg/kg/2 Years continuous.</p> <p>Toxic Effects: Tumorigenic- Carcinogenic by RTECS criteria. Brain and Coverings- Other degenerative changes. Gastrointestinal- Tumors.</p> <p><b>DEVELOPMENTAL TOXICITY/REPRODUCTIVE EFFECTS</b>: Rat TCl<sub>o</sub> (Inhalation), 25ppm/6 Hours, female, 6-20 Days of pregnancy.</p> <p>Toxic Effects: Effects on Embryo or Fetus- Fetotoxicity. Rat TDLo (Oral), 650mg/kg, female, 6-15 Days of pregnancy.</p> <p>Toxic Effects: Effects on Fertility- Female fertility index. Effects on Embryo or Fetus- Fetotoxicity. Specific Developmental Abnormalities- Musculoskeletal system. Hamster TDLo (Intraperitoneal), 641mg/kg, female, 8 Days of pregnancy.</p> <p>Toxic Effects: Effects on Embryo or Fetus- Extra embryonic structures. Effects in Embryo or Fetus- Cytological changes. Effects on Embryo or Fetus- Fetotoxicity.</p>

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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. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
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	481°C (897.8°F)
Flash Points	-6°C (21.2°F).	Flammable Limits	LOWER: 3% UPPER: 17%
Combustion Products	These products are toxic carbon oxides (CO, CO <sub>2</sub> ). WARNING: Very toxic cyanide gas may be produced in a fire. Do not inhale.		
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	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	Highly toxic material. Flammable material. Corrosive material. Carcinogenic material. Lachrymatory material. Vesicant material. Environmentally hazardous material. Heat and 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.
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### Section VII. Handling and Storage

Handling and Storage Information	HIGHLY TOXIC. FLAMMABLE. CORROSIVE. CARCINOGEN. LACHRYMATOR. VESICANT. ENVIRONMENTAL HAZARD. HEAT AND LIGHT SENSITIVE. 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.
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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	OSHA PEL Ceiling: 10ppm OSHA TLV-TWA: 2ppm This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.

### Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid. (Clear, colorless to pale-yellow.)	Solubility	Miscible with most organic solvents.
Specific Gravity	0.81(water=1)		
Molecular Weight	53.06	Partition Coefficient	Not available.
Boiling Point	77 to 78°C (170.6 to 172.4°F)	Vapor Pressure	11.5 kPa (@ 20°C)
Melting Point	-83°C (-117.4°F)	Vapor Density	1.83 (Air = 1)
Refractive Index	1.3888	Volatility	Not available.

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Critical Temperature	263°C (505.4°F)	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	May polymerize on exposure to light. Sensitive to heat and light.
Incompatibilities	Reactive with oxidizing agents, heat, copper, copper alloys, aluminum.

### Section XI. Toxicological Information

RTECS Number	AT5250000
Routes of Exposure	Eye Contact. Ingestion. Inhalation. Skin contact.
Toxicity Data	Rat LC <sub>50</sub> (inhalation) 333ppm/4H Rat LD <sub>50</sub> (oral) 78mg/kg Rabbit LD <sub>50</sub> (dermal) 63mg/kg
Chronic Toxic Effects	<p><b>CARCINOGENIC EFFECTS</b> : Carcinogenic by RTECS criteria.  <b>MUTAGENIC EFFECTS</b> : Not available.  <b>TERATOGENIC EFFECTS</b> : TUMORIGENIC EFFECTS:  Rat TCLo (Inhalation), 5ppm/52 Weeks intermittent.  Toxic Effects:  Tumorigenic- Equivocal tumorigenic agent by RTECS criteria.  Skin and Appendages- Tumors.  Rat TD (Oral), 3640mg/kg/52 Weeks continuous.  Toxic Effects:  Tumorigenic- Neoplastic by RTECS criteria.  Sense Organs and Special Senses (Nose, Eye, Ear, and Taste)- Tumors.  Gastrointestinal- Tumors.  Rat TDLo (Oral), 2490mg/kg/2 Years continuous.  Toxic Effects:  Tumorigenic- Carcinogenic by RTECS criteria.  Brain and Coverings- Other degenerative changes.  Gastrointestinal- Tumors.  <b>DEVELOPMENTAL TOXICITY/REPRODUCTIVE EFFECTS</b>:  Rat TCLo (Inhalation), 25ppm/6 Hours, female, 6-20 Days of pregnancy.  Toxic Effects:  Effects on Embryo or Fetus- Fetotoxicity.  Rat TDLo (Oral), 650mg/kg, female, 6-15 Days of pregnancy.  Toxic Effects:  Effects on Fertility- Female fertility index.  Effects on Embryo or Fetus- Fetotoxicity.  Specific Developmental Abnormalities- Musculoskeletal system.  Hamster TDLo (Intraperitoneal), 641mg/kg, female, 8 Days of pregnancy.  Toxic Effects:  Effects on Embryo or Fetus- Extra embryonic structures.  Effects in Embryo or Fetus- Cytological changes.  Effects on Embryo or Fetus- Fetotoxicity.  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>
Acute Toxic Effects	Highly 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.

### Section XII. Ecological Information

Ecotoxicity	This material is toxic to aquatic organisms and may cause long term adverse effects to the aquatic environment.
Environmental Fate	Acrylonitrile's production and use in acrylonitrile-butadiene-styrene/styrene-acrylonitrile resins, acrylamide, nitrile elastomers, polymers, polyols, barrier resins, and carbon fibers may result in its release to the environment through various waste streams. If released to air, a vapor pressure of 109 mm Hg at 25 deg C indicates acrylonitrile will exist solely as a vapor in the ambient atmosphere. Vapor-phase acrylonitrile will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals and ozone; the half-lives for these reactions in air are estimated to be 4 and 83 days, respectively. Acrylonitrile does not absorb light >290 nm and is therefore not susceptible to direct photolysis. If released to soil, acrylonitrile is expected to have very high mobility based upon an estimated Koc of 33. Volatilization from moist soil surfaces is expected to be an important fate process based upon a Henry's Law constant of 1.38X10 <sup>-4</sup> atm-cu m/mole. Acrylonitrile may volatilize from dry soil surfaces based upon its vapor pressure. At concn up to 100 ppm, complete degradation of acrylonitrile occurred in <2 days in soil. If released into water, acrylonitrile is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. Acrylonitrile completely degraded in river water in 6 days and degraded completely in 20 days in another study, requiring less time for degradation with acclimation. Volatilization from water surfaces is expected to be an important fate process based upon this compound's Henry's Law

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constant. Estimated volatilization half-lives for a model river and model lake are 4 hours and 4 days, respectively. A BCF of 48 for bluegills suggests the potential for bioconcentration in aquatic organisms is moderate. Acrylonitrile was stable at pH 4 to 10 for 23 days indicating that hydrolysis is negligible under these conditions. Occupational exposure to acrylonitrile may occur through inhalation and dermal contact with this compound at workplaces where acrylonitrile is produced or used. Monitoring data indicate that the general population may be exposed to acrylonitrile via inhalation of ambient air and dermal contact with products containing acrylonitrile.

### 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** CLASS 3: Flammable liquid.  
CLASS 6.1: Toxic liquid.

**PIN Number** UN1093

**Proper Shipping Name** Acrylonitrile, stabilized.

**Packing Group (PG)** I

**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. This product is subject to SARA Section 313 reporting requirements. On EPA IRIS Database.

**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.

**EINECS Number (EEC)** 203-466-5

**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.  
R41- Risk of serious damage to eyes.  
R45- May cause cancer.  
R50- Very toxic to aquatic organisms.  
R53- May cause long-term adverse effects in the aquatic environment.

**Japanese Regulatory Data** Not available.

### Section XVI. Other Information

**Version 1.0**  
**Validated on 6/16/2003.**  
**Printed 1/10/2005.**

#### 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.