

# Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
  	<p><b>Toxic compound, do not ingest or inhale. Avoid all contact with this material.</b></p> <p><b>Irritating to skin, eyes, and the respiratory system.</b></p> <p><b>Light sensitive. Readily absorbed through skin.</b></p> <p><b>CARCINOGEN. MINIMIZE EXPOSURE.</b></p> <p><b>MUTAGEN. MINIMIZE EXPOSURE.</b></p>	   

## Section I. Chemical Product and Company Identification

Chemical Name	<b>Acrylamide, Monomer</b>		
Catalog Number	A0139	Supplier	TCI America 9211 N. Harbortgate St. Portland OR 1-800-423-8616
Synonym	Not available.		
Chemical Formula	C <sub>3</sub> H <sub>5</sub> NO		
CAS Number	79-06-1	In case of Emergency Call	<b>Chemtrec®</b> <b>(800) 424-9300 (U.S.)</b> <b>(703) 527-3887</b> <b>(International)</b>

## Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Acrylamide, Monomer	79-06-1	Min. 98.0 (T)	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.  This compound is classified as a mutagen. There is no acceptable exposure limit for a mutagen.	Rat LD <sub>50</sub> (oral) 124 mg/kg Mouse LD <sub>50</sub> (oral) 107 mg/kg Rabbit LD <sub>50</sub> (oral) 150 mg/kg Rat LD <sub>50</sub> (dermal) 400 mg/kg Rabbit LD <sub>50</sub> (dermal) 1680 uL/kg

## Section III. Hazards Identification

Acute Health Effects	<p>Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death.</p> <p>Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.</p> <p>Readily absorbed through skin.</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.</p> <p>Rat TD Oral 1460 mg/kg/2 years continuous</p> <p>TOXIC Effects:</p> <p>Tumorigenic - Carcinogenic by RTECS criteria</p> <p>Brain and Coverings - Tumors</p> <p>Skin and Appendages - Tumors</p> <p>Rat TDLo Oral 1456 mg/kg/2 years continuous</p> <p>TOXIC Effects:</p> <p>Tumorigenic - Carcinogenic by RTECS criteria</p> <p>Tumorigenic Effects - Testicular tumors</p> <p>Mouse TDLo Oral 300 mg/kg/2 weeks intermittent</p> <p>TOXIC Effects:</p> <p>Tumorigenic - Carcinogenic by RTECS criteria</p> <p>Lung, Thorax, or Respiration - Tumors</p> <p>Skin and Appendages - Tumors</p> <p><b>DEVELOPMENTAL TOXICITY</b> : Reproductive Effects.</p> <p>Rat TCLo Inhalation 225 mg/kg, male 5 days prior to mating</p> <p>TOXIC Effects:</p> <p>Paternal Effects - Other effects on male</p> <p>Effects on Fertility - Post implantation mortality</p> <p>Effects on Fertility - Litter size</p> <p>Rat TDLo Oral 225 mg/kg, male 5 days prior to mating</p> <p>TOXIC Effects:</p> <p>Effects on Fertility - Pre implantation mortality</p> <p>Effects on Fertility - Post implantation mortality</p> <p>Effects on Embryo or Fetus - Fetal Death</p> <p>Rat TDLo Oral 945 mg/kg, male 70 days and 70 days prior to mating; 4 weeks after birth prior to mating</p> <p>TOXIC Effects:</p> <p>Effects on Newborn - Viability index</p> <p>Effects on Newborn - Growth statistics</p> <p>Effects on Newborn - Behavioral</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	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. 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	424°C (795.2°F)
Flash Points	138°C (280.4°F).	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO, NO <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	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.		

**Section VI. Accidental Release Measures**

Spill Cleanup Instructions	Toxic material. Irritating material. Light sensitive material. Material is readily absorbed through skin. Carcinogenic material. Mutagenic material. Stop leak if without risk. DO NOT get water inside container. DO NOT touch spilled material. 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.
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**Section VII. Handling and Storage**

Handling and Storage Information	TOXIC. IRRITANT. LIGHT SENSITIVE. READILY ABSORBED THROUGH SKIN. CARCINOGENIC. MUTAGENIC. Keep locked up. 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 dust. 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	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust 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	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen. This compound is classified as a mutagen. There is no acceptable exposure limit for a mutagen.

**Section IX. Physical and Chemical Properties**

Physical state @ 20°C	Solid. (White, Crystal.)	Solubility	Soluble in Alcohol, Acetone, Water. Insoluble in Benzene, Heptane.
Specific Gravity	Not available.	Partition Coefficient	Log P <sub>ow</sub> : -0.67
Molecular Weight	71.08	Vapor Pressure	0.27 kPa (@ 87°C)
Boiling Point	125°C (257°F) @ 25 mmHg	Vapor Density	2.45 (Air = 1)
Melting Point	85°C (185°F)	Volatility	Not available.
Refractive Index	Not available.	Odor	Odorless.
Critical Temperature	Not available.	Taste	Not available.
Viscosity	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 oxidizing agents, acid, iron and iron salts, copper, brass, free radical indicators.

**Section XI. Toxicological Information**

RTECS Number	AS3325000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD <sub>50</sub> (oral) 124 mg/kg Mouse LD <sub>50</sub> (oral) 107 mg/kg Rabbit LD <sub>50</sub> (oral) 150 mg/kg Rat LD <sub>50</sub> (dermal) 400 mg/kg Rabbit LD <sub>50</sub> (dermal) 1680 uL/kg
Chronic Toxic Effects	<b>CARCINOGENIC EFFECTS</b> : Carcinogenic by RTECS criteria. <b>MUTAGENIC EFFECTS</b> : Not available. <b>TERATOGENIC EFFECTS</b> : Tumorigenic Effects. Rat TD Oral 1460 mg/kg/2 years continuous TOXIC Effects: Tumorigenic – Carcinogenic by RTECS criteria Brain and Coverings – Tumors Skin and Appendages – Tumors Rat TDLo Oral 1456 mg/kg/2 years continuous TOXIC Effects: Tumorigenic – Carcinogenic by RTECS criteria Tumorigenic Effects – Testicular tumors Mouse TDLo Oral 300 mg/kg/2 weeks intermittent TOXIC Effects: Tumorigenic – Carcinogenic by RTECS criteria Lung, Thorax, or Respiration – Tumors Skin and Appendages – Tumors <b>DEVELOPMENTAL TOXICITY</b> : Reproductive Effects. Rat TCLo Inhalation 225 mg/kg, male 5 days prior to mating TOXIC Effects: Paternal Effects – Other effects on male Effects on Fertility – Post implantation mortality Effects on Fertility – Litter size Rat TDLo Oral 225 mg/kg, male 5 days prior to mating TOXIC Effects: Effects on Fertility – Pre implantation mortality Effects on Fertility – Post implantation mortality Effects on Embryo or Fetus – Fetal Death Rat TDLo Oral 945 mg/kg, male 70 days and 70 days prior to mating; 4 weeks after birth prior to mating TOXIC Effects: Effects on Newborn – Viability index Effects on Newborn – Growth statistics Effects on Newborn – Behavioral
Acute Toxic Effects	Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Readily absorbed through skin. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

**Section XII. Ecological Information**

Ecotoxicity	Not available.
Environmental Fate	Acrylamide's production and use in the production of polyacrylamide and amide monomers may result in its release to the environment through various waste streams. If released to air, a vapor pressure of 0.007 mm Hg at 25 deg C indicates acrylamide will exist solely as a vapor in the ambient atmosphere. Vapor-phase acrylamide 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 1.4 days. The half-life for the reaction of vapor-phase acrylamide with ozone is estimated to be 6.5 days. Acrylamide is not expected to be susceptible to direct photolysis in sunlight since it does not absorb light with wavelengths >290 nm. If released to soil, acrylamide is expected to have very high mobility based upon an estimated Koc of 10. Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant of 1.8X10 <sup>-9</sup> atm-cu m/mole. Volatilization from dry soil surfaces is not expected based on acrylamide's vapor pressure. The nitrogen in acrylamide was recovered as inorganic nitrogen with recoveries after 3 and 14 days at 30 deg C ranging from 11-71% in Clarion soil and 74-95% in Canisteo soil, respectively. Results from these studies suggested that acrylamide is hydrolyzed in soil under aerobic conditions to produce ammonium ion, which is then oxidized to nitrite ion and nitrate ion. If released into water, acrylamide is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. In a river die-away test, 90% of acrylamide disappeared in approximately 150 hours. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's Henry's Law constant. A BCF of 1 for fingerling trout, suggests the potential for bioconcentration in aquatic organisms is low. The hydrolysis half-life of acrylamide has been reported as >38 yrs. Occupational exposure to acrylamide may occur through inhalation and dermal contact with this compound at workplaces where acrylamide is produced or used such as its use in soil stabilization. Monitoring data indicate that the general population may be exposed to acrylamide via ingestion of food and drinking water and via dermal contact with polyacrylamide products, which may contain acrylamide. Acrylamide has been found in certain foods that have been cooked and processed at high

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Emergency phone number (800) 424-9300

temperatures. In foods that have been analyzed, the highest average levels of acrylamide were found in potato crisps and chips; however, levels varied widely from not detected to 3.5 mg/kg of product. Average daily intakes of acrylamide for the general population were estimated to be 0.3–0.8 ug of acrylamide per kg of body weight. In addition, tobacco smoke is a substantial non-food source of exposure to acrylamide for people without occupational exposure.

### 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 6.1: Toxic material.

PIN Number UN2074

Proper Shipping Name Acrylamide, solid

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).  
On DSL

EINECS Number (EEC) 201-173-7

EEC Risk Statements  
R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.  
R36/37/38- Irritating to eyes, respiratory system and skin.  
R46- May cause heritable genetic damage.  
R47- May cause birth defects.

Japanese Regulatory Data ENCS No. 2-1014

### Section XVI. Other Information

**Version 1.0**  
**Validated on 2/5/2007.**  
**Printed 2/5/2007.**

#### Notice to Reader

TCl 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.