G.J. CHEMICAL COMPANY, INC. SAFETY DATA SHEET

1. PRODUCT IDENTIFIER

1.1 PRODUCT NAME: ACRYLIC ACID, GLACIAL

PRODUCT NUMBER(S): 101500, 101600,101700, 101800

TRADE NAMES/SYNONYMS: Acroleic Acid, Propene Acid, 2-Propenoic Acid, Ethylenecarboxylic Acid, Vinylformic Acid

CAS-No: 79-10-7

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST
RECOMMENDED USE: Industrial: Polymer preparation, Textile dye, Use of inks, Polymerization at production site of substance super-absorbent polymers and other polyacrylates, Manufacture of substances, Laboratory Chemicals
USES ADVISED AGAINST: No information available

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET
Company: G.J. CHEMICAL CO., INC.
Address: 40 VERONICA AVENUE
SOMERSET, NJ 08873
Telephone: 1-973-589-1450
Fax: 1-973-589-3072

1.4 Emergency Telephone Number
Emergency Phone: 1-800-424-9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29CFR 1910 (OSHA HCS)

Flammable liquids (Category 3), H226
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Acute toxicity, Dermal (Category 5), H312
Skin corrosion (Category 1A), H314
Serious eye damage (Category 1), H318
Specific target organ toxicity - single exposure (Category 3) Respiratory system

H335
Acute aquatic toxicity (Category 1), H400

2.2 GHS Label elements, including precautionary statements

Pictogram

GHS02 GHS05 GHS07 GHS09

Signal word: DANGER

Hazard statement(s)
H226 Flammable liquid and vapor.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic Life

Precautionary statement(s)
Prevention:
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391 Collect spillage.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. INGREDIENTS

3.1 SUBSTANCE:	CAS No.	% by WT. Range	CLASSIFICATION
Acrylic Acid EC-No.201-177-9 Index-No.607-061-00-8 Reg.-No. 01-2119452449-31-XXXX	79-10-7	99.8	Flammable liquids (Category 3), H226 Acute toxicity, Oral (Category 4), H302 Acute toxicity, Inhalation (Category 4), H332 Acute toxicity, Dermal (Category 5), H312 Skin corrosion (Category 1A), H314 Serious eye damage (Category 1), H318 STOT-SE (Category 3), Respiratory system, H335 Acute aquatic toxicity (Category 1), H400
Monomethyl Ether of Hydroquinone (MEHQ) EC-No.205-769-8 Index-No.604-044-00-7 Reg.-No. 01-2119541813-40-XXXX Dissolved air must be present for inhibitor to function effectively.	150-76-5	180-240 ppm	Acute toxicity, Oral (Category 4), H302 Eye irritation (Category 2A), H314 Acute aquatic toxicity (Category 3), H400 Chronic aquatic toxicity (Category 3), H412

3.2 MIXTURE: Not applicable.

4. FIRST-AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

INGESTION: Acrylic Acid, Glacial

*******FIRST AID-* **Patient should be made to drink large amounts of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician or poison control center, treat symptomatically.**

EYE CONTACT (Splash): Acrylic Acid, Glacial

*******FIRST AID-* **Immediately flush eyes with water for 15 minutes. Hold eyelids open for complete irrigation. Immediately take to a physician.**

INHALATION: Acrylic Acid, Glacial

*******FIRST AID-* **Remove from exposure to fresh air, restore breathing use oxygen if needed. Keep warm and quiet. Immediately notify a physician.**

SKIN CONTACT (Splash): Acrylic Acid, Glacial

*******FIRST AID-* **Wash affected area with soap and large amounts of water. Remove contaminated clothing. Consult a physician if irritation persists.**

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Ingestion: Highly Toxic; Can severely irritate mouth, throat, and stomach.
Eye contact: Corrosive, Can cause chemical burn - damage irreversible, Vapors are extremely irritating.
Inhalation: Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract, Can cause pulmonary edema (accumulation of fluid in the lungs); Signs and symptoms can be delayed for several hours.
Skin contact: Corrosive; Can cause burns resulting in permanent damage, Can be absorbed through skin;

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

Notes to Physician: Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives, and corticosteroids may be of help. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory Distress. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns/ulceration of the mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome.

5. FIRE FIGHTING MEASURES

Flash Point: 48.5°C (119.3°F) TCC **LEL %: 2.4 (V)**
Auto-ignition Temp: 438°C (820.4°F) **UEL %: 17 (V)**
UMIFORM FIRE CODE: Combustible Liquid Class II

5.1 EXTINGUISHING MEDIA:

Suitable extinguishing media: Foam--> x CO2--> x Dry Chemical--> x Water-fog--> x Other--> Alcohol resistant foams (ATC type) are preferred.

Unsuitable extinguishing media: Do not use waterjet.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

DANGEROUS FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME. VAPORS CAN TRAVEL TO A SOURCE OF IGNITION AND FLASH BACK. HEAT CAN CAUSE POLYMERIZATION. HEATED CONTAINERS CAN EXPLODE.
Keep containers tightly closed. Combustible liquid; isolate from all sources of ignition. Closed containers may explode when exposed to extreme heat. Rapid uncontrolled polymerization can cause explosion. Containers that rupture explosively, due to polymerization, may auto-ignite

CONDITIONS OF FLAMMABILITY: Flammable in the presence of a source of ignition when the temperature is above the flash point.

HAZARDOUS COMBUSTION PRODUCTS: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, carbon oxides and other unidentified organic compounds evolve when this material undergoes combustion.

5.3 ADVICE FOR FIREFIGHTERS:

Shut off source. Water fog may be used to cool closed containers to prevent pressure build up and possible auto ignition or explosion when exposed to extreme heat. Fight advanced fires from a protected location. Consider the use of unmanned hose holders or monitor nozzles. Wear NIOSH/MSHA approved self-contained breathing apparatus (SCBA) and turn out gear for confined spaces and where there is exposure to vapors. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Use full fire- fighting turn out gear including NIOSH/MSHA approved positive pressure self-contained breathing apparatus (SCBA). Avoid contact with chemical during fire-fighting operations. If contact is likely change to full chemical resistant fire-fighting clothing with self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY

PROCEDURES: Combustible Liquid; Evacuate area. Keep personnel out of low areas. Keep upwind of spill. Eliminate ignition sources in the vicinity of the spill or released vapor. Vapor explosion hazard. Verify that responders are properly trained and wearing appropriate respiratory equipment and fire resistant protective clothing during cleanup operations.

6.2 ENVIRONMENTAL PRECAUTIONS:
Keep out of water sources, drains and sewers. Do not flush into surface water or sanitary sewer system.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:
Methods for cleanup and containment:
Use explosion proof equipment. Shut off valves, contain spill, keep out of water sources and sewers, for smaller spills add non-flammable absorbent such as clay or silica in spill area. If an odor or acidity problem exists, add lime or sodium bicarbonate. Place saturated absorbent in an approved container for disposal. For large spills use foam on spill to minimize vapors clean up by vacuuming then using non-flammable absorbent.
Methods for disposal:
Remove contaminated soil to remove contaminated trace residues. Place all saturated absorbent, using non-sparking tools, in an approved container for disposal. Flush with water to remove trace reside. Minimize breathing vapors and skin contact, ventilate confined areas, open all windows and doors, assure conformity with applicable government regulations. Keep all nonessential people away. Caution: Spontaneous polymerization can occur if material is released or mixed with incompatibles.

REPORTABLE QUANTITY (RQ): 5000lbs.
The Superfund Amendments and Reauthorization Act (SARA) Section 304 requires that a release equal to or greater than the reportable quantity for this substance be immediately reported to the local emergency planning committee and the state emergency response commission (40 CFR 355.40). If the release of this substance is reportable under CERCLA Section 103, the national response center must be notified immediately at (800) 424-8882 or (202) 426-2675 in the metropolitan Washington, D. C. area (40 CFR 302.6).

6.4 REFERENCE TO OTHER SECTIONS: See Sections 8 and 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING: This material is corrosive.
Product Freezes at 12.78°C/ 55°F. Improper thawing can result in violent polymerization. Thaw frozen drums by placing them in a heated room up to 40°C/104°F for 48 hours. Do not remove any material if stock is frozen or partially frozen. Mix during and after thawing to properly distribute inhibitor. Never use steam or electric heating bands.
Avoid work practices that may release volatile components in the atmosphere. Avoid contaminating soil or releasing material into sewage and drainage systems. Use non-sparking tools to open or close containers. Do not take internally. Avoid prolonged or repeated contact with skin, eyes, and clothing.

Avoid breathing vapors in top of shipping container. Use with adequate ventilation. Electrically ground and bond all equipment.

Advice on general occupational hygiene:
Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuffs. When using do not smoke.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:
Maintain contact with atmosphere of 5-21% oxygen. Do not use inert atmosphere as blanket. Under proper storage conditions a storage stability of 1 year is expected at ambient temperature.
Store in closed containers away from direct sunlight. To prevent hazardous polymerization store containers in a well ventilated area at product temperatures between 59°F and 77°F. Drums of acrylic acid should not be stored for periods exceeding one year. If product solidifies, melt only in a temperature controlled environment. Drums may be thawed by placing in a heated room at temperatures between 68°F and 91°F. Product being melted, particularly in 55 gallon drums, should be agitated at regular intervals by rolling to assure thorough mixing and distribution of the polymerization inhibitor. Never use steam or electrical heating devices (e.g. tapes, mantles, jackets) to thaw this product. As soon as the product is thawed, normal storage temperatures (59 to 77°F) should be established.

Uninhibited monomer vapors can polymerize and plug relief devices.
Drums may be thawed by placing in a heated room at temperatures between 68°F and 91°F. Product being melted, particularly in 55 gallon drums, should be agitated at regular intervals by rolling to assure thorough mixing and distribution of the polymerization inhibitor. Never use steam or electrical heating devices (e.g. tapes, mantles, jackets) to thaw this product. As soon as the product is thawed, normal storage temperatures (59 to 77°F) should be established. Hygroscopic.
Storage class (TRGS 510): 3: Flammable liquids

STATIC HAZARD> Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not be sufficient. For more information refer to OSHA Standard 29CFR 1910.106 “Flammable and Combustible Liquids” and National Fire Protection Association (NFPA 77) “Recommended Practice on Static Electricity”.

CONTAINER WARNINGS> Containers should be Bonded and Grounded when pouring. Avoid free fall of liquid in excess of a few inches. Empty containers release residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, or expose such containers to heat, sparks, static electricity or other sources of ignition. Do not attempt to clean. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum re-

conditioner.

7.3 SPECIFIC END USES: Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROL (PERSONAL PROTECTION)

8.1 CONTROL PARAMETERS:

Ingredient	CAS No.	% by WT. Range	Exposure Limits
Acrylic Acid	79-10-7	99.8	2ppm TWA (ACGIH)
	EC-No.201-177-9		2ppm TWA (NIOSH)
	Index-No.607-061-00-8		
	Reg.-No. 01-2119452449-31-XXXX		
Monomethyl Ether of Hydroquinone (MEHQ)	150-76-5	180-240ppm	5mg/m3 TWA (ACGIH)
	EC-No.205-769-8		
	Index-No.604-044-00-7		
	Reg.-No. 01-2119541813-40-XXXX		
Dissolved air must be present in order for inhibitor to function effectively.			

Key: (PEL) = Permissible Exposure Limit OSHA
(TLV) = Threshold Limit Value OSHA & ACGIH
(STEL) = Short Term Exposure Limit ACGIH
(WEEL) = USA. Workplace Environmental Exposure Levels
(TWA) = Time Weighted Average
CAS = Chemical Abstracts Registry Number
IDLH = Immediate Danger to Life and Health
N.E. =None Established

8.2 EXPOSURE CONTROLS

EXPOSURE GUIDELINES> Consider the potential hazards of this material (Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended.

ENGINEERING CONTROLS> Provide general dilution or local exhaust ventilation in volume and pattern to keep concentrations within permitted exposure limits. All areas should be ventilated in accordance with OSHA Regulation 29 CFR Part 1910. Explosion proof motors should be used in mechanical ventilation.

RESPIRATORY PROTECTION> The specific respirator selected must be based on contamination levels found in the work place, must not exceed the working limits of the respirator and be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA):

For vapor concentrations 1 to 10 times TWA or PEL an air purifying NIOSH/MSHA Approved respirator with full face-piece and organic vapor cartridges. For concentrations over 10 times TWA or PEL, in confined areas, and/or where vapor concentrations are unknown use a NIOSH/MSHA approved positive pressure full face-piece supplied air respirator (SCBA).

BODY CLOTHING> Use chemical resistant apron or other impervious clothing. Remove and wash contaminated clothing before reuse.

SKIN PROTECTION> Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.
Full contact
Material: butyl-rubber;
Splash contact
Material: Nitrile rubber

HYGIENE: Use good personal hygiene practices, wash hands before eating, drinking, smoking or using toilet facilities.

EYE/FACE PROTECTION> Use safety eyewear with splash guards or face shield. Maintain shower and eyewash in the work area.

⑨. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Acrylic Acid 79-10-7
Appearance----------> Clear mobile liquid
Color----------> Colorless
Odor----------> Strong acrid odor
Odor Threshold---------- > No data available
pH---------- > 1.0 - 2 at 500 g/l
Molecular weight---------- > 72.0amu
Melting/Freezing Point----------> 55.4°F
Boiling Range (°F)---------- > 139°C (282°F)
Specific Gravity---------- > 1.05@25°C
Vapor Pressure----------> 4.0mmHg@20°C
Vapor Density (air=1)----------> 2.5
Water Solubility---------- > complete
Partition Coefficient N-Octanol/water- > <3
Evaporation Rate (Butyl Acetate=1)----> 1
Flash Point----------> 48.5°C (119.3°F) - closed cup
Upper Flammability Limit----------> 17.0% (V)
Lower Flammability Limit----------> 2.4 % (V)

Auto-ignition Temperature----------> 438°C (820.4°F)
Decomposition Temperature----------> No data available
Viscosity----------> No data available
Explosive Properties----------> No data available
Oxidizing Properties---------- > No data available

9.2 OTHER INFORMATION----------> No data available.

10. STABILITY AND REACTIVITY INFORMATION

10.1 REACTIVITY: No data available.

10.2 CHEMICAL STABILITY: Unstable ( ) Stable (X)
This material is considered stable under specified conditions of storage, shipment and use. See storage, Section 7. Unstable at elevated temperatures. Hygroscopic.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS: Inhibitor is added to this product to prevent polymerization. However this material can undergo hazardous polymerization. Excessive aging, heat, contamination with polymerization catalysts, oxygen free atmosphere, inhibitor depletion or ultraviolet light (sunlight) may cause polymerization. Freezing followed by improper thawing and inhibitor redistribution may cause hazardous polymerization. An uncontrolled polymerization may produce a rapid release of energy with the potential for an explosion of unvented closed containers. Uninhibited monomer vapors can polymerize and plug relief devices.

HAZARDOUS POLYMERIZATION--> May occur (X) Will not occur ( )
Uncontrolled polymerization can cause rapid evolution of heat and increased pressure which can result in violent rupture or storage vessels or containers.

10.4 CONDITIONS TO AVOID> Avoid temperatures above 25°C. Avoid temperatures below 15°C. Extremes of temperature and direct sunlight. Avoid static discharge. The inhibitor used in this monomer can separate if product becomes frozen.. Depletion of dissolved oxygen severely reduces the effectiveness of the inhibitor and can lead to polymerization. Heat, Sparks, Pilot Lights, Static Electricity, and Open Flame. Sunlight, x-ray, or ultraviolet radiation.

10.5 INCOMPATIBLE MATERIALS--> Avoid contact with the following: Acids, Bases, Oxidizing agents, Reducing agents, UV light, free radical and peroxide initiators, aldehydes, amines, anhydrides, azides, ethers, halides, mercaptans, organic peroxides. Iron oxides, Mild steel, brass, copper.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS--> Fumes, Smoke, Carbon Monoxide, Aldehydes and other decomposition products where combustion is not complete.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

Routes of Entry: Inhalation--> x Skin--> x Ingestion--> x

ACUTE HEALTH EFFECTS:

Effects of overexposure:

Eye> Corrosive, Can cause chemical burn - damage irreversible, Vapors are extremely irritating.;

Skin> Toxic corrosive, Can cause chemical burn. Sensitization (allergic reaction) can occur. ;

Inhalation> Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract, Can cause pulmonary edema (accumulation of fluid in the lungs); Signs and symptoms can be delayed for several hours.

Ingestion> Highly toxic. Can cause pain and burning in mouth, throat and stomach.

Medical Conditions Aggravated by Exposure: Significant exposure to this chemical may adversely affect people with chronic disease of the respiratory system, skin and/or eyes.

ACUTE TOXICITY:

The effects of overexposure shown in Section II are based on acute toxicity profiles. Typical values are:

Ingredient	Oral LD50 (Rat)	Skin LD50 (Rabbit)	Inhalation LC50
Acrylic Acid	1000- 2000mg/kg	>2000mg/kg	>5100ppm/4hr

SKIN CORROSION/IRRITATION: Brief contact may cause severe skin burns. Symptoms may include pain, severe local redness and tissue damage.

SERIOUS EYE DAMAGE/EYE IRRITATION: May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur. Vapors may cause severe eye irritation.

RESPIRATORY OR SKIN SENSITIZATION:

Respiratory: No relevant data found.
Skin: Did not cause allergic skin reactions when tested in guinea pigs.

MUTAGENIC EFFECTS: Approximately 12 standard mutagenicity studies have been conducted with acrylic acid. All in vivo studies and the majority of in vitro studies (including the Ames test) have been negative.
Reproduction: No evidence or teratogenicity in rats; inhalation study. Reported ton not adversely affect reproduction in rats, oral exposure.

CARCINOGEN STATUS:
This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC classification.
IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Acrylic acid)
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Acrylic Acid was not carcinogenic in a well-conducted drinking water study in rats at concentrations up to 1200ppm and in well-conducted lifetime dermal studies in mice.

REPRODUCTIVE TOXICITY: No data available.

Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized System): Inhalation - May cause respiratory irritation. - Respiratory system

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally Harmonized System): no data available

ASPIRATION HAZARD: May be harmful if swallowed and enters airways.

11.2 ADDITIONAL INFORMATION: No data available

12. ECOLOGICAL INFORMATION

DANGEROUS TO AQUATIC LIFE IN HIGH CONCENTRATIONS
May be dangerous if it enters water intakes.
Notify local health and pollution control officials.
Notify operators of nearby water intakes.

12.1 AQUATIC TOXICITY (Acute):

Toxicity to fish:
LC50 - Oncorhynchus mykiss (rainbow trout) - 27 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates:
EC50 - Daphnia magna (Water flea) - 95 mg/l - 48 h

Toxicity to algae:
EC50 - Desmodesmus subspicatus (green algae) - 0.04 mg/l-96h
EC50 - Desmodesmus subspicatus (green algae) - 0.13 mg/l - 72h OECD Test Guideline 201 or equivalent.
EC10 - Desmodesmus subspicatus (green algae) – 0.03mg/l -72h Algal inhibition test

Toxicity to bacteria:
NOEC activated sludge, 30min, Respiration rates, 100mg/l ISO 8192

CHRONIC AQUATIC TOXICITY:
Chronic toxicity to aquatic invertebrates:
NOEC, Daphnia magna (Water flea), 21 d, Immobilization, 3.8mg/l
NOEC, Daphnia magna (Water Flea), 21 d, number of offspring, 19mg/l

12.2 PERSISTANCE AND DEGRADABILITY:
Biodegradability: Material is readily biodegradable. Passes OECD tests for ready biodegradability.
Biodegradation: Result 80-90%, 28 days, Method OECD Test guideline 301D
Stability in water (1/2-life): Hydrolysis DT50 > 1 year, pH3-11, Temp. 25°C

12.3 BIOACCUMULATIVE POTENTIAL:
Bioaccumulation: Bio-concentration potential is low (BCF <100 or Log Pow <3)
Partition Coefficient n-octanol/water (log Pow): 0.46 measured
Bio-concentration Factor (BCF): 3.16 Fish Estimated

12.4 MOBILITY IN SOIL:
Potential for mobility in soil is very high (Koc between 0 and 50)
Partition coefficient (Koc): 6-137 Estimated

12.5 RESULTS OF PBT AND vPvB : This substance/mixture is not considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 OTHER ADVERSE EFFECTS: Acrylic Acid This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS > Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly it is the responsibility of the user to determine the proper storage, transportation, treatment and or disposal methodologies for spent materials and residues at time of disposition. Dispose in accordance with all applicable disposal regulations. Incinerate or biologically treat under controlled conditions in a permitted facility.

CONTAMINATED PACKAGING: Dispose of as unused product.

RCRA: The unused product is a RCRA hazardous waste if discarded. The RCRA ID number is: U008, D001.

DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 48 CFR 262

14. TRANSPORT INFORMATION

Land Transport (DOT)
14.1 USDOT ID Number----------> UN2218
14.2 USDOT Shipping Name----------> Acrylic acid, stabilized
14.3 USDOT Hazard Classification-------> 8 (Corrosive Liquid)
USDOT Label Codes----------> 8, 3
14.4 USDOT Package Code----------> II
14.5 Marine Pollutant----------> No
14.6 Special precautions for user--------> Yes
Emergency Response Guide--------> 132P
Reportable quantity----------> 5000lbs.

Sea Transport (IMDG)
14.1 ID Number----------> UN2218
14.2 Proper shipping name----------> ACRYLIC ACID, STABILIZED
14.3 Hazard Classification----------> 8 (Corrosive Liquid)
Label Codes----------> 8, 3
14.4 Package Code----------> II
14.5 Marine Pollutant----------> Yes
14.6 Special precautions for user----------> Yes
EMS-Number----------> F-E, S-C

Air Transport (IATA)
14.1 ID Number----------> UN2218
14.2 Proper shipping name----------> Acrylic acid, stabilized
14.3 Hazard Classification----------> 8 (Corrosive Liquid)
Label Codes----------> 8, 3

14.4 Package Code----------> II
14.5 Environmental hazard----------> None
14.6 Special precautions for user----------> No

15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:

SARA TITLE III (Superfund Amendment and Reauthorization Act)
SECTION 302 AND 304: Extremely Hazardous Substance List (40 CFR 355) - Not Listed
SECTION 313: Toxic Chemicals Listing (40 CFR 372.65) - Listed Acrylic Acid 99.8% CAS 79-10-7
SECTION 311/312: Hazard Categorization (40 CFR 370) - Acute Health Hazard, Chronic Health Hazard, Fire Hazard, Reactive Hazard.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

SECTION 102(A) Hazardous Substances (40 CFR 302.4) - Listed
Reportable Quantity - 5,000 pounds.
SECTION 101(14) Reportable Quantity: 5,000 lbs

Massachusetts Right to Know Components
Acrylic acid CAS-No.79-10-7

Pennsylvania Right to Know Components
Acrylic acid CAS-No.79-10-7

New Jersey Right to Know Components
Acrylic acid CAS-No.79-10-7

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

TSCA (Toxic Substance Control Act)
Acrylic Acid CAS 79-10-7 is listed on the TSCA Inventory.

Acrylic Acid FDA Indirect Food Contact Approvals:
21CFR175.105, 21CFR175.300, 21CFR175.320, 21CFR175.360, 21CFR175.365, 21CFR175.380, 21CFR175.390, 21CFR176.110, 21CFR176.170, 21CFR176.180 21CFR177.1010, 21CFR177.1200, 21CFR177.1210, 21CFR177.1310, 21CFR177.1500, 21CFR177.1630, 21CFR177.2260, 21CFR178.3130,

21CFR178.3790, 21CFR179.45, FDA list of indirect additives used in food contact substances.

International Inventories:

Country or Region	Inventory Name	On inventory yes/no
Australia	Australian Inventory of Chemical Substances	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemicals Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Japan	Industrial Safety & Health Law Inventory (ISHL)	Yes
Korea	Existing Chemicals List (ECL)	Yes
Mexico	National Inventory of Chemical Substances (INSQ)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	**Yes**
Switzerland	Inventory of Notified New Substances (CHINV)	Yes
Taiwan	National Existing Chemical Inventory (NECI)	Yes
United States & Puerto Rico	Toxic Substances Control Act Inventory	Yes

15.2 CHEMICAL SAFETY ASSESSMENT: A chemical safety assessment has been carried out for this substance.

16. OTHER INFORMATION:

Hazard Rating:

4-Extreme
3-High
2-Moderate
1-Slight
0-Insignificant

NFPA RATINGS (SCALE 0-4):	**Health=3**	**Fire=2**	**Reactivity=2**	
HMIS RATINGS (SCALE 0-4):	**Health=3**	**Fire=2**	**Reactivity=2**	**PPE=X**

Hazard statement(s) from Section 2 and 3:
H226 Flammable liquid and vapor.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic Life

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Acronyms:

ACGIH	-	American Conference of Governmental Industrial Hygenists
AIHA	-	American Industrial Hygiene Association
ANSI	-	American Nation Standards Institute
API	-	American Petroleum Institute
CERCLA	-	Comprehensive Emergency Response, Compensation, and Liability Act
DOT	-	U.S. Department of Transportation
EPA	-	U.S. Environmental Protection Agency
HMIS	-	Hazardous Materials Information System
IARC	-	International Agency For Research On Cancer
MSHA	-	Mine Safety and Health Administration
NFPA	-	National Fire Protection Association
NIOSH	-	National Institute of Occupational Safety and Health
NOIC	-	Notice of Intended Change (Proposed change to ACGIH TLV)
NTP	-	National Toxicology Program
OPA	-	Oil Pollution Act of 1990
OSHA	-	U.S. Occupational Safety & Health Administration
PEL	-	Permissible Exposure Limit (OSHA)
RCRA	-	Resource Conservation and Recovery Act
REL	-	Recommended Exposure Limit (NIOSH)
SARA	-	Superfund Amendments and Reauthorization Act of 1986 Title III
SCBA	-	Self-Contained Breathing Apparatus
STEL	-	Short-Term Exposure Limit (generally 15 minutes)
TLV	-	Threshold Limit Value
TSCA	-	Toxic Substances Control Act
TWA	-	Time Weighted Average (8hr.)
WHMIS	-	Canadian Workplace Hazardous Materials Information System