NORSOCRYL® ACRYLIC ACID GLACIAL WITH PTZ

1. PRODUCT AND COMPANY IDENTIFICATION

Company

Arkema Inc.
900 First Avenue
King of Prussia, Pennsylvania 19406

Acrylic Monomers

Customer Service Telephone Number: 1-800-338-1015
(Monday through Friday, 8:30 AM to 5:30 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)
Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: NORSOCRYL® ACRYLIC ACID GLACIAL WITH PTZ
Synonyms: ACRYLIC ACID, GAA
Molecular formula: C3H4O2
Chemical family: carboxylic acid
Molecular weight: 72.06 g/mol
Product use: Organic intermediate

2. HAZARDS IDENTIFICATION

Emergency Overview

Color: Clear - colourless
Physical state: liquid
Odor: acidic

DANGER!
FLAMMABLE LIQUID AND VAPOR.
CAUSES EYE AND SKIN BURNS.
MAY CAUSE BLINDNESS.
HARMFUL OR FATAL IF SWALLOWED.
CAN ENTER LUNGS AND CAUSE DAMAGE.
HARMFUL IF INHALED OR ABSORBED THROUGH SKIN.
CAUSES RESPIRATORY TRACT IRRITATION.

Potential Health Effects

Primary routes of exposure:
Inhalation and skin contact.

Signs and symptoms of acute exposure:
Corrosive to skin and eyes. Causes burns. Liquid, vapor or mist: Irritating to respiratory system, digestive tract. If swallowed, may cause severe irritation and injury to the mouth, throat and digestive tract. Aspiration hazard if

swallowed - can enter lungs and cause damage. Symptoms of aspiration may include increased breathing and heart rate, coughing and related signs of respiratory distress.

Skin:
Moderately toxic. Corrosive. (based on animal studies)

Inhalation:
Toxic by inhalation. (based on animal studies)

Eyes:
Corrosive. (based on animal studies)

Ingestion:
Slightly toxic. (based on animal studies)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	OSHA Hazardous
2-Propenoic acid	79-10-7	> 99 %	Y
10H-Phenothiazine	92-84-2	> 250 - < 350 PPM	Y

The substance(s) marked with a "Y" in the Hazard column above, are those identified as hazardous chemicals under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

This material is classified as hazardous under Federal OSHA regulation.

4. FIRST AID MEASURES

Inhalation:
If inhaled, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. Call a Poison Control Center.

Skin:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Call a Poison Control Center. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately. Call a Poison Control Center.

Ingestion:
If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give a cupful of water. If vomiting occurs, have person lean forward. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

Flash point 124 °F (51 °C) (closed cup)(Method: Literature)

Auto-ignition temperature: 774 °F (412 °C) (Method: Literature)

Lower flammable limit (LFL): 2.4 %(V) (Method: Literature)

Upper flammable limit (UFL): 17 %(V) (Method: Literature)

Extinguishing media (suitable):
Water spray, Carbon dioxide (CO2), Foam, Dry chemical

Extinguishing media (unsuitable):
Do not use a solid water stream as it may scatter and spread fire.

Protective equipment:
Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:
Fight fire from a protected location.
Explosion hazard
Fire-fighting equipment must be thoroughly cleaned after use.
Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited by heat, pilot lights, and other flames and ignition sources at locations distant from material handling point.
Closed containers of this material may explode when subjected to heat from surrounding fire.
Cool closed containers exposed to fire with water spray.
Do not allow run-off from fire fighting to enter drains or water courses.

Fire and explosion hazards:
When burned, the following hazardous products of combustion can occur:
Carbon oxides
A large amount of heat can be generated when monomers are exposed to a fire.
Heated sealed containers can explode.

6. ACCIDENTAL RELEASE MEASURES

In case of spill or leak:
Prevent further leakage or spillage if you can do so without risk. Evacuate area of all unnecessary personnel. Ventilate the area. Eliminate all ignition sources. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as sodium bicarbonate, sodium carbonate, calcium carbonate, clean sand or non-acidic clay and then wet down (dampen) the mixture with water. Sweep or scoop up using non-sparking tools and place into suitable properly labeled containers for prompt disposal. The sweepings should be wetted down further with water. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

7. HANDLING AND STORAGE

Handling

General information on handling:
Keep away from heat, sparks and flames.
Do not taste or swallow.
Do not get in eyes, on skin, or on clothing.
Avoid breathing vapor or mist.
Keep container tightly closed.
Keep away from water and moist air.
Use only with adequate ventilation.
Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited by heat, pilot lights, and other flames and ignition sources at locations distant from material handling point.
Check that all equipment is properly grounded and installed to satisfy electrical classification requirements.
Container hazardous when empty.
Wash thoroughly after handling.
Emptied container retains vapor and product residue.
Follow label warnings even after container is emptied.
RESIDUAL VAPORS MAY EXPLODE ON IGNITION.
DO NOT CUT, DRILL, GRIND, OR WELD ON OR NEAR THIS CONTAINER.
Improper disposal or reuse of this container may be dangerous and/or illegal.

Storage

General information on storage conditions:
Store in well ventilated area away from heat and sources of ignition such as flame, sparks and static electricity. Ensure that all storage and handling equipment is properly grounded and installed to satisfy electrical classification requirements. Static electricity may accumulate when transferring material. All metal and groundable storage containers, including but not limited to drums, cylinders, Returnable Intermodal Bulk Containers (RIBCs) and Class C Flexible Intermodal Bulk Containers (FIBCs) must be bonded and grounded during filling and emptying operations. Observe all federal, state and local regulations and National Fire Protection Association (NFPA) Codes which pertain to the specific local conditions of storage and use, including OSHA 29 CFR 1910.106 and NFPA 30, 70, 77, and 497. Avoid freezing. The inhibitor used with this monomer may separate if product becomes frozen. If frozen, material must be warmed and remixed gently.

Storage stability – Remarks:
The typical shelf-life for this product is 12 months. The stability of this product should be checked periodically; typically every 90 days for bulk containers. Storage of this product above the maxium temperature tolerance reduces the shelf life. Materials recommended for packaging include: stainless steel, aluminum, glass, HDPE, PP or PTFE. Recommended oxygen level is 5 to 8% by volume. Recommended inhibitor level is 10 to 20 ppm. Uninhibited monomer vapors can polymerize and plug relief devices.

Storage incompatibility – General:
Store away from sources of heat and light. Store separate from: Free radical generators

Peroxides

Strong oxidizing agents

Amines

Rust

Anhydrides

Aldehydes

Strong bases

Mercaptans

Halides

Azides

Ethers

Temperature tolerance – Do not store above:
90 °F (32 °C)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

2-Propenoic acid (79-10-7)

US. ACGIH Threshold Limit Values

Time Weighted Average (TWA):	2 ppm
Skin designation	
Remarks:	Can be absorbed through the skin.

Only those components with exposure limits are printed in this section. Limits with skin contact designation above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required. Limits with a sensitizer designation above mean that exposure to this material may cause allergic reactions.

Engineering controls:
Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above).If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Respiratory protection:
Avoid breathing vapor or mist. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Skin protection:
Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact.

When handling this material, gloves of the following type(s) should be worn: butyl-rubber Wear chemical goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing immediately and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.

Eye protection:
Where there is potential for eye contact, wear a face shield, chemical goggles, and have eye flushing equipment immediately available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Clear - colourless
Physical state:	liquid
Odor:	acidic
pH:	4.2 (25 °C (77 °F))
Density:	1.049 g/cm3 (68 °F (20 °C)) (Method: Literature)
Vapor pressure:	3 mmHg (68 °F (20 °C))(Method: Literature)
Vapor density:	2.5 kg/m3 (Method: Literature)
Boiling point/boiling range:	286 °F (141 °C) (Method: Literature)
Freezing point:	55 °F (13 °C)(Method: Literature)
Solubility in water:	68 °F (20 °C) soluble
Viscosity, dynamic:	1.19 mPa.s 68 °F (20 °C) (Method: Literature)
% Volatiles:	100 %
Molecular weight:	72.06 g/mol
Henry's constant:	15E+00 $Pa.m^3/mol$

10. STABILITY AND REACTIVITY

Stability:
This material is chemically stable under normal and anticipated storage, handling and processing conditions. However, this material can undergo hazardous polymerization.

Hazardous reactions:
Hazardous polymerisation may occur.
Avoid freezing.
After freezing and thawing, hazardous polymerization can occur if thawed incorrectly.

Materials to avoid:
Free radical generators
Peroxides
Strong oxidizing agents
Aldehydes
Amines
Anhydrides
Rust
Strong bases
Mercaptans
Halides
Azides
Ethers

Conditions / hazards to avoid:
An uncontrolled polymerization may produce a rapid release of energy with the potential for an explosion of unvented closed containers or inadequately vented containers. This material polymerizes exothermically in the presence of heat, contamination, oxygen free atmosphere, free radicals, peroxides and inhibitor depletion liberating heat. Do NOT expose to ultraviolet light. Avoid direct sunlight.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products
Carbon oxides

11. TOXICOLOGICAL INFORMATION

Data on this material and/or its components are summarized below.

Data for 2-Propenoic acid (79-10-7)

Acute toxicity

Oral:
Slightly toxic. (rat) LD50 = 1,250 - 3,200 mg/kg.

Dermal:
Moderately toxic. (rabbit) LD50 = 295 - 750 mg/kg.

Inhalation:
No deaths observed. (rat) 1 h LC0 approx. 7 mg/l (2352 ppm). signs: lung effects, irritation (vapor)

Toxic. (rat) 4 h LC50 3.6 mg/l. lung effects, irritation (vapor)

Practically nontoxic. (rat) 4 h LC50 > 5.1 mg/l. lung effects, irritation, eye irritation (vapor)

Skin Irritation:
Corrosive. (rabbit) (3 min)

Eye Irritation:
Corrosive. (rabbit)

Skin Sensitization:
Not a skin sensitizer. Repeated skin exposure. (mouse) No skin allergy was observed (Irritation was observed.)

Not a skin sensitizer. Repeated skin exposure. (guinea pig) No skin allergy was observed

Skin sensitizer in presence of impurities. Guinea pig maximization test. (guinea pig) Skin allergy was observed.

Repeated dose toxicity
Drinking water administration to rat / affected organ(s): kidney, testes / signs: changes in food or water consumption, increased organ weight

Drinking water administration to rat / affected organ(s): stomach, lung, nose

Inhalation administration to rat and mouse / affected organ(s): nose / signs: tissue damage

Inhalation administration to rat / affected organ(s): lung

Repeated dermal administration to mouse / signs: skin irritation

Carcinogenicity
Chronic dermal administration to mouse / No increase in tumor incidence was reported.

Chronic drinking water administration to rat / No increase in tumor incidence was reported.
Classified by the International Agency for Research on Cancer as: Group 3: Unclassifiable as to carcinogenicity in humans.

Genotoxicity

Assessment in Vitro:
No genetic changes were observed in laboratory tests using: bacteria

Both positive and negative responses for genetic changes were observed in laboratory tests using: animal cells

Genotoxicity

Assessment in Vivo:
No genetic changes were observed in laboratory tests using: rats, mice, fruit flies

Developmental toxicity
Exposure during pregnancy. drinking water (rat) / No birth defects were observed. (delays in development)
Exposure during pregnancy. inhalation (rabbit) / No birth defects were observed. (at doses that produce effects in mothers)

Reproductive effects
Reproduction test. drinking water (rat) / No toxicity to reproduction.

Other information
Aspiration hazard

Human experience
Inhalation:
Respiratory tract: irritation, breathing difficulties.

Some rare cases of asthmatic reactions reported (irritant effects from the product).

Human experience
Skin contact:
No skin allergy was observed. (repeated or prolonged exposure) (studied using human volunteers)

12. ECOLOGICAL INFORMATION

Chemical Fate and Pathway
Data on this material and/or its components are summarized below.

Data for 2-Propenoic acid (79-10-7)

Biodegradation:
Biodegradable. (28 d) biodegradation 81 %

Octanol Water Partition Coefficient:
log Pow = 0.16

Ecotoxicology
Data on this material and/or its components are summarized below.

Data for 2-Propenoic acid (79-10-7)

Aquatic toxicity data:
Practically nontoxic. Cyprinodon variegatus (sheepshead minnow) 96 h LC50 = 236 mg/l
Slightly toxic. Oncorhynchus mykiss (rainbow trout) 96 h LC50 = 27 mg/l

Aquatic invertebrates:
Slightly toxic. Mysid shrimp 96 h LC50 = 97 mg/l
Slightly toxic. Daphnia magna (Water flea) 48 h EC50 = 95 mg/l

Algae:
Highly toxic. Algae 96 h EC50 = 0.17 mg/l

13. DISPOSAL CONSIDERATIONS

Waste disposal:
Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

14. TRANSPORT INFORMATION

US Department of Transportation (DOT)

UN Number	:	2218
Proper shipping name	:	Acrylic acid, stabilized
Technical name	:	(Acrylic acid)
Class	:	8
Subsidiary hazard class	:	(3)
Packaging group	:	II
Marine pollutant	:	no
Reportable quantity	:	5000 lbs (Acrylic acid)

Special Shipping Information: For Domestic Shipments: Add Subsidiary Hazards - TOXIC

International Maritime Dangerous Goods Code (IMDG)

UN Number	:	2218
Proper shipping name	:	ACRYLIC ACID, STABILIZED
Class	:	8
Subsidiary hazard class	:	(3)
Packaging group	:	II
Marine pollutant	:	yes
Flash point	:	124 °F (51 °C) closed cup

15. REGULATORY INFORMATION

Chemical Inventory Status

EU. EINECS	EINECS	Conforms to
US. Toxic Substances Control Act	TSCA	The components of this product are all on the TSCA Inventory.
Australia. Industrial Chemical (Notification and Assessment) Act	AICS	Conforms to
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 144)	DSL	All components of this product are on the Canadian DSL list.
Japan. Kashin-Hou Law List	ENCS (JP)	Conforms to

Korea. Existing Chemicals Inventory (KECI)	KECI (KR)	Conforms to
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	PICCS (PH)	Conforms to
China. Inventory of Existing Chemical Substances	IECSC (CN)	Conforms to
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	NZIOC	Conforms to

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:
Acute Health Hazard, Fire Hazard, Reactivity Hazard

SARA Title III – Section 313 Toxic Chemicals:

Chemical Name	CAS-No.	De minimis concentration	Reportable threshold:	
2-Propenoic acid	79-10-7		1.0 %	10000 lbs (Otherwise used (non-manufacturing/processing)) 25000 lbs (Manufacturing and processing)

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

Chemical Name	CAS-No.	Reportable quantity
2-Propenoic acid	79-10-7	5000 lbs

OSHA Regulated Carcinogens (NTP, IARC, OSHA Listed):

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.

IARC:
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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.

United States – State Regulations

New Jersey Right to Know

Chemical Name	CAS-No.
2-Propenoic acid	79-10-7

New Jersey Right to Know – Special Health Hazard Substance(s)

Chemical Name	CAS-No.
2-Propenoic acid	79-10-7

Pennsylvania Right to Know

Chemical Name	CAS-No.
2-Propenoic acid	79-10-7

Pennsylvania Right to Know – Environmentally Hazardous Substance(s)

Chemical Name	CAS-No.
2-Propenoic acid	79-10-7

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

16. OTHER INFORMATION

Miscellaneous:

Other information:	Refer to National Fire Protection Association (NFPA) Codes 30, 70, 77, and 497 and OSHA 29 CFR 1910.106, for safe handling.

Latest Revision(s):

Revised Section(s):	Updated Corporate Address Change and Rocky Mountain Poison Center Phone Number
Reference number:	000000066277
Date of Revision:	07/11/2011
Date Printed:	07/11/2011

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