

SAFETY DATA SHEET



Revision date: 12-Jul-2023

Revision Number 7

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product identifier

Product Name ACRYLIC ACID

Product Code(s) 000030121001

Other means of identification

UN number 2218

CAS No. 79-10-7

Synonyms 2-Propenoic acid; Vinylformic acid; Acroleic acid; Ethylene carboxylic acid; Glacial acrylic acid.

Recommended use of the chemical and restrictions on use

Recommended use Monomer.

Uses advised against No information available

Supplier

Ixom Operations Pty Ltd
ABN: 51 600 546 512
Level 8, 1 Nicholson Street
Melbourne 3000
Australia

Telephone Number: +61 3 9906 3000

Emergency telephone number

Emergency telephone number **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

2. HAZARDS IDENTIFICATION

GHS Classification

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

Flammable liquids	Category 3
Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Vapors)	Category 3
Skin corrosion/irritation	Category 1 Sub-category A

Serious eye damage/eye irritation	Category 1
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 2

SIGNAL WORD

Danger

Label elements

Corrosion
Flame
Skull and crossbones
Environment

**Hazard statements**

H226 - Flammable liquid and vapor
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H311 - Toxic in contact with skin
H331 - Toxic if inhaled

The following health/environmental hazard categories fall outside the scope of the Workplace Health and Safety Regulations:

H400 - Very toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical, ventilating, lighting equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Do not breathe fume, gas, mist, vapours, spray
Wash face, hands and any exposed skin thoroughly after handling
Wash eyes thoroughly after handling.
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Wear protective gloves / protective clothing / eye protection / face protection
Wear respiratory protection
Avoid release to the environment

Precautionary Statements - Response

Specific treatment is urgent (see First aid on this SDS)
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
IF ON SKIN: Wash with plenty of soap and water
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
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
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting
In case of fire: Use extinguishing media as outlined in Section 5 of this Safety Data Sheet to extinguish.

Collect spillage

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed

Store in a well-ventilated place. Keep cool

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other hazards which do not result in classification

General Hazards

Poisons Schedule (SUSMP) None allocated

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight-%
Acrylic acid	79-10-7	>=99.5%
Methyl ether of hydroquinone	150-76-5	180-220 ppm

4. FIRST AID MEASURES

Description of first aid measures

General advice	For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.
Inhalation	Remove to fresh air. If breathing is difficult, (trained personnel should) give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing has stopped, give artificial respiration. Get medical attention immediately.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Call a physician immediately.
Skin contact	IF ON SKIN: Wash with plenty of soap and water. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention immediately if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician immediately.
Self-protection of the first aider	Remove all sources of ignition. Do not breathe fume, gas, mist, vapours, spray. Avoid contact with skin, eyes, and clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information.

Most important symptoms and effects, both acute and delayed

Symptoms	Irritation/Corrosion. May cause redness and tearing of the eyes. Erythema (skin redness). Burning.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically. Can cause corneal burns. No specific antidote. Delayed pulmonary edema may occur.
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5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media Dry chemical, CO₂, water spray or regular foam.

Unsuitable extinguishing media High volume water jet.

Specific hazards arising from the chemical

Specific hazards arising from the chemical Flammable. Risk of ignition. May form flammable vapour mixtures with air. Keep product and empty container away from heat and sources of ignition. Risk of violent self-polymerization if overheated in a container. Cool drums with water spray. In case of a fire in the vicinity a restabilization system should be used if the temperature in the bulk storage-tank reaches 45°C. Evacuate area of all unnecessary personnel. In case of a fire in the vicinity evacuate all personnel in a greater area if the temperature in the bulk storage-tank reaches 60°C. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Hazchem code •2W

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes, and clothing. Do not breathe vapor or mist. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. Do not touch or walk through spilled material. Use personal protective equipment as required. Wash thoroughly after handling. See section 8 for more information.

Other information Extremely slippery when spilled.

For emergency responders In the case of vapor formation use a respirator with an approved filter. Shut off ignition sources. Clear area of all unprotected personnel. Pay attention to flashback.

Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Slippery when spilt. Avoid accidents, clean up immediately. Take precautionary measures against static discharges. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Use non-sparking tools. For large amounts, pump off product.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

The product may be handled only by appropriately trained personnel. If drummed product freezes, before use complete thawing is required in water bath. Do not use steam to heat or thaw the product. Never remove liquid from a partially-thawed container; the remaining material could be seriously under-inhibited. Avoid contact with skin and eyes. Do not breathe vapor or mist. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges. Use personal protection equipment. Wash thoroughly after handling. Ensure thorough ventilation of stores and work areas. Encapsulation or exhaust ventilation required. When filling, transferring, or emptying of containers, adequate local exhaust ventilation is necessary. Vent waste air to atmosphere only through suitable separators. Check the condition of seals and connector screw threads. Do not open warm or swollen product containers. Remove persons to safety and alert fire brigade. Do not store with less than 10 % headspace above liquid.

General hygiene considerations

Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands and face before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from direct sunlight. Keep at temperatures between 15 °C and 25 °C. Store away from sources of heat or ignition. Ensure adequate inhibitor and dissolved oxygen level. It is recommended that all conductive parts of the machinery are grounded. Explosion-proof equipment is not necessary when loading and processing of the product takes place at a minimum of 5°C below the flash point. Keep container closed when not in use.

Storage temperature: 45 °C

A restabilization system should be used if the temperature in the bulk storage-tank reaches the indicated value.

Storage temperature: 60 °C

All personnel in a greater area should be evacuated if the temperature in the bulk storage-tank reaches the indicated value.

Incompatible materials

Radical formers, free radical initiators, peroxides, mercaptans, nitro-compounds, perborates, azides, ether, ketones, aldehydes, amines, nitrates, nitrites, oxidizing agents, reducing agents, strong bases, alkaline reactive substances, acid anhydrides, acid chlorides, concentrated mineral acids, metal salts, inert gas.

Poisons Schedule (SUSMP)

None allocated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

Acrylic acid: 8hr TWA = 5.9 mg/m³ (2 ppm), Sk

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

`Sk' (skin) Notice - absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls

Engineering controls

Ensure that eyewash stations and safety showers are close to the workstation location. Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, CHEMICAL GOGGLES, FACE SHIELD, GLOVES (Long), APRON, RUBBER BOOTS.



Eye/face protection

Tight sealing safety goggles. If splashes are likely to occur: Face protection shield.

Skin and body protection

Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.

Hand protection

Elbow-length impervious gloves.

Respiratory protection

If determined by a risk assessment an inhalation risk exists, wear an organic vapour respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

Environmental exposure controls

No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Color	Colourless
Odor	Vinegar -like
Odor threshold	Not determined

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	2 (~70 g/L, 20°C, literature data)	
pH (as aqueous solution)	No data available	None known
Melting point / freezing point	13°C (literature data)	None known
Boiling point / boiling range	141°C @1013 hPa (literature data)	None known
Flash point	48.5°C	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	5.29 hPa @25°C (literature data)	None known
Vapor density	2.48 @20°C (air=1)	
Relative density	1.05 @20°C (literature data)	
Water solubility	Miscible in water	
Solubility(ies)	Miscible in organic solvents.	None known
Partition coefficient	log Pow = 0.46 @25°C	None known
Autoignition temperature	>300°C	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	1.149 mPa.s @25°C (literature data)	None known

Other information**10. STABILITY AND REACTIVITY**Reactivity

Reactivity Reacts with nitric acid. Polymerizes explosively in contact with strong oxidizing agents.

Chemical stability

Stability Stable under recommended storage conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

Possibility of hazardous reactions

Possibility of hazardous reactions Vapours can form an explosive mixture with air. Corrosive to metals in the presence of moisture. Explosion and fire hazard exists under confined conditions. Ignitable air mixtures can form when the product is heated above the flash point and/or when sprayed or atomized. Formation of explosive gas/air mixtures. Polymerization coupled with heat formation. Risk of spontaneous polymerization by oxygen depletion of the liquid phase. Risk of spontaneous polymerization when heated or in the presence of UV radiation. Risk of spontaneous and violent self-polymerization if inhibitor is lost or product is exposed to excessive heat. Polymerization produces gases which may burst closed or confined containers. Reactions may cause ignition. Radical formation can cause exothermic polymerization. Reacts with peroxides and other radical components. Risk of spontaneous polymerization in the presence of starters for radical chain reactions (e.g. peroxides). Reacts with nitric acid. Polymerizes explosively in contact with strong oxidizing agents. Risk of spontaneous polymerization in the presence of oxidizing agents. Hazardous reactions in presence of mentioned incompatible materials to avoid. The product is stabilized against spontaneous polymerization prior to despatch.

Conditions to avoid**Conditions to avoid**

Heat, flames and sparks. UV-radiation/sunlight. Static discharge (electrostatic discharge). Avoid contact with water. Avoid exposure to moisture. Avoid freezing temperatures. Avoid oxygen content above the product of less than 5 %. Avoid inhibitor loss. Avoid aerosol formation.

Incompatible materials**Incompatible materials**

Radical formers, free radical initiators, peroxides, mercaptans, nitro-compounds, perborates, azides, ether, ketones, aldehydes, amines, nitrates, nitrites, oxidizing agents, reducing agents, strong bases, alkaline reactive substances, acid anhydrides, acid chlorides, concentrated mineral acids, metal salts, inert gas.

Hazardous decomposition products

Hazardous decomposition products No hazardous decomposition products if stored and handled as prescribed/indicated.

11. TOXICOLOGICAL INFORMATION**Acute toxicity****Information on likely routes of exposure****Product Information**

No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:

Inhalation

May cause irritation. Toxic by inhalation.

Eye contact

Causes serious eye damage.

Skin contact

Causes burns.

Ingestion

Can burn mouth, throat, and stomach. Harmful if swallowed.

Symptoms

Irritation/Corrosion. May cause redness and tearing of the eyes. May cause blindness. Erythema (skin redness). Burning.

Numerical measures of toxicity - Product Information**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Acrylic acid	= 1000-<2000 mg/kg (Rat)	= 280 µL/kg (Rabbit) = 295 mg/kg (Rabbit)	= 3.6 mg/L (Rat) 4 h = 11.1 mg/L (Rat) 1 h
Methyl ether of hydroquinone	= 1600 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Skin corrosion/irritation**

Causes burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

Not a skin sensitiser (guinea pig).

Germ cell mutagenicity	No information available.
Carcinogenicity	This material has been classified by the International Agency for Research on Cancer (IARC) as a Group 3 agent. Group 3 - The agent is not classifiable as to its carcinogenicity to humans. Data available is insufficient for an assessment to be made.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	Not applicable.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity Keep out of waterways. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Acrylic acid	EC50: =0.17mg/L (96h, Pseudokirchneriella subcapitata) EC50: =0.04mg/L (72h, Desmodesmus subspicatus)	LC50: =222mg/L (96h, Brachydanio rerio)	-	EC50: =95mg/L (48h, Daphnia magna) LC50: =270mg/L (24h, Daphnia magna)
Methyl ether of hydroquinone	-	LC50: =84.3mg/L (96h, Pimephales promelas) LC50: =28.5mg/L (96h, Oncorhynchus mykiss)	-	-

Persistence and degradability

Persistence and degradability Readily biodegradable.

Bioaccumulative potential

Bioaccumulation Material does not bioaccumulate.

Component Information

Chemical name	Partition coefficient
Acrylic acid	0.46
Methyl ether of hydroquinone	1.3

Mobility

Mobility in soil No information available.

Other adverse effects

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products	Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Empty containers should be taken to an approved waste handling site for recycling or disposal. Empty containers must be tripled rinsed prior to disposal.

14. TRANSPORT INFORMATION

ADG

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

UN number	2218
Proper shipping name	ACRYLIC ACID, STABILIZED
Hazard class	8
Subsidiary hazard class	3
Packing group	II
Hazchem code	•2W

IATA

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN number	2218
UN proper shipping name	ACRYLIC ACID, STABILIZED
Transport hazard class(es)	8
Subsidiary hazard class	3
Packing group	II

IMDG

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN number	2218
UN proper shipping name	ACRYLIC ACID, STABILIZED
Transport hazard class(es)	8
Subsidiary hazard class	3
Packing group	II
IMDG EMS Fire	F-E
IMDG EMS Spill	S-C
Marine pollutant	Yes

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

See section 8 for national exposure control parameters

Poisons Schedule (SUSMP) None allocated**Major hazard (accident/incident planning) regulation**

Verify that license requirements are met

Hazardous chemical

Liquids that meet the criteria for Class 3 Packing Group II or III

Threshold quantity (T)

50 000

National pollutant inventory

Subject to reporting requirement

Chemical name	National pollutant inventory
Acrylic acid - 79-10-7	10 tonne/yr Threshold category 1

International Inventories**AIIC**

All the constituents of this material are listed on the Australian Inventory of Industrial Chemicals.

NZIoC

All the constituents of this material are listed on the New Zealand Inventory of Chemicals.

Legend:**AIIC- Australian Inventory of Industrial Chemicals****NZIoC - New Zealand Inventory of Chemicals****International Regulations****The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable**The Stockholm Convention on Persistent Organic Pollutants** Not applicable**The Rotterdam Convention** Not applicable**16. OTHER INFORMATION**

Supplier Safety Data Sheet 12/ 2022

Reason(s) For Issue: 5 Yearly Revised Primary SDS**Issuing Date:** 12-Jul-2023

This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).

Revision Note:

The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS

EPA (Environmental Protection Agency)

Acute Exposure Guideline Level(s) (AEGl(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian Industrial Chemicals Introduction Scheme (AICIS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Disclaimer

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

End of Safety Data Sheet