

# Safety Data Sheet



## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name:** **ACRYLIC ACID**

**Other name(s):** 2-Propenoic acid; Vinylformic acid; Acroleic acid; Ethylene carboxylic acid; Glacial acrylic acid.

**Recommended Use of the Chemical and Restrictions on Use** Monomer in the manufacture of acrylic resins.

**Supplier:** Ixom Operations Pty Ltd  
**ABN:** 51 600 546 512  
**Street Address:** Level 8, 1 Nicholson Street  
East Melbourne Victoria 3002  
Australia

**Telephone Number:** +61 3 9906 3000  
**Emergency Telephone:** **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

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

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

### Classification of the chemical:

Flammable liquids - Category 3  
Acute Oral Toxicity - Category 4  
Acute Dermal Toxicity - Category 4  
Acute Inhalation Toxicity - Category 4  
Skin Corrosion - Sub-category 1A  
Eye Damage - Category 1  
Specific target organ toxicity (single exposure) - Category 3

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

Acute Aquatic Toxicity - Category 1  
Chronic Aquatic Toxicity - Category 2

**SIGNAL WORD:** DANGER



### Hazard Statement(s):

H226 Flammable liquid and vapour.  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.

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## Precautionary Statement(s):

### Prevention:

P210 Keep away from heat, sparks, open flames, hot surfaces. No smoking.  
P233 Keep container tightly closed.  
P240 Ground or 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.  
P260 Do not breathe dust / fume / gas / mist / vapours / spray.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves / protective clothing / eye protection / face protection.

### Response:

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P321 Specific treatment (see First Aid Measures on Safety Data Sheet).  
P322 Specific measures (see First Aid Measures on Safety Data Sheet).  
P363 Wash contaminated clothing before re-use.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P304+P312 IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312 Call a POISON CENTER or doctor/physician if you feel unwell.  
P370+P378 In case of fire: Use extinguishing media as outlined in Section 5 of this Safety Data Sheet to extinguish.

### 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 and container in accordance with local, regional, national, international regulations.

**Poisons Schedule (SUSMP):** None allocated.

## 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion	Hazard Codes
Acrylic acid	79-10-7	>=99.8%	H226 H332 H312 H302 H314 H335 H400
Methyl ether of hydroquinone	150-76-5	180-220 ppm	H302 H319 H317

## 4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor.

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## **Inhalation:**

Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discoloration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

## **Skin Contact:**

If spilt on large areas of skin or hair, immediately drench with running water and remove clothing. Continue to wash skin and hair with plenty of water (and soap if material is insoluble) until advised to stop by the Poisons Information Centre or a doctor.

## **Eye Contact:**

Immediately wash in and around the eye area with large amounts of water for at least 15 minutes. Eyelids to be held apart. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport promptly to hospital or medical centre.

## **Ingestion:**

Immediately rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek immediate medical assistance.

## **Indication of immediate medical attention and special treatment needed:**

Treat symptomatically. Can cause corneal burns. No known specific antidote. Administer corticosteroid dose aerosol to prevent pulmonary oedema. Effects may be delayed.

## **5. FIRE FIGHTING MEASURES**

### **Suitable Extinguishing Media:**

Alcohol resistant foam is the preferred firefighting medium but, if it is not available, fine water spray or water fog can be used.

### **Hazchem or Emergency Action Code:** - 2W

### **Specific hazards arising from the chemical:**

Flammable liquid. Vapour may travel a considerable distance to source of ignition and flash back. Risk of violent self-polymerization if overheated in a container. Explosive-like polymerization.

### **Special protective equipment and precautions for fire-fighters:**

Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. If safe to do so, remove containers from the path of fire. Keep containers cool with water spray. Flameproof equipment is necessary in all areas where this chemical is being used. Nearby equipment must be earthed. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion. Contaminated extinguishing water must be disposed of in accordance with official regulations.

In case of a fire in the vicinity a restabilization system should be used if the temperature in the storage container 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 storage container reaches 60°C.

## **6. ACCIDENTAL RELEASE MEASURES**

### **Emergency procedures/Environmental precautions:**

Shut off all possible sources of ignition. Clear area of all unprotected personnel. Do not discharge into waterways or sewer systems without proper authorization. Contain contaminated water/firefighting water. If contamination of sewers or waterways has occurred advise local emergency services.

**Personal precautions/Protective equipment/Methods and materials for containment and cleaning up:**

Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Neutralise residues with lime or soda ash. Collect and seal in properly labelled containers or drums for disposal. For large amounts, pump off product.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:**

The product may be handled only by appropriately trained personnel. If drummed product freezes, before use complete thawing is required in waterbath. 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 skin and eye contact and breathing in vapour, mists and aerosols. Keep out of reach of children. All potential sources of ignition (open flames, pilot lights, furnaces, spark producing switches and electrical equipment etc) must be eliminated both in and near the work area. Do NOT smoke. Take precautionary measures against static discharges.

**Conditions for safe storage, including any incompatibilities:**

Prior to storage ensure that the transfer equipment used and the intended storage containers do not contain other substances/products. Before transfer to stock the identity of the product must be proved to be without doubt. The entrance to storage rooms is to be granted only to appropriately trained personnel.

The stabilizer is only effective in the presence of oxygen. Maintain contact with atmosphere containing 5-21% oxygen. Never use tanks with inert-gas installation for storage. Store in a cool, dry, well ventilated place and out of direct sunlight. Store away from sources of heat or ignition. Protect from light. Protect from freezing. Protect against contamination. Store away from incompatible materials described in Section 10. Do not store with less than 10% headspace above liquid.

Acrylic acid should ideally be stored between 15°C and 25°C, where possible. Storage duration: 12 months. Avoid prolonged storage. This product should be processed as soon as possible. During storage, an unavoidable dimerization takes place, which reaction rate can be reduced by a storage temperature as low as possible. Ensure adequate inhibitor and dissolved oxygen level. Keep containers closed when not in use - check regularly for leaks.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Acrylic acid: 8hr TWA = 5.9 mg/m<sup>3</sup> (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.

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## Appropriate engineering controls:

Ensure ventilation is adequate to maintain air concentrations below Workplace Exposure Standards. Vapour heavier than air - prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected. Keep containers closed when not in use.

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 (PPE):

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.



Wear overalls, chemical goggles, face shield, elbow-length impervious gloves, splash apron or equivalent chemical impervious outer garment, and rubber boots. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

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.

Wearing of closed work clothing is required additionally to the stated personal protection equipment.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b>	Liquid
<b>Colour:</b>	Colourless
<b>Odour:</b>	Pungent
<b>Odour Threshold:</b>	Not determined
<b>Molecular Formula:</b>	C <sub>3</sub> H <sub>4</sub> O <sub>2</sub>
<b>Solubility:</b>	Miscible in water.
<b>Specific Gravity:</b>	1.05 @ 20°C
<b>Relative Vapour Density (air=1):</b>	2.45
<b>Vapour Pressure (20 °C):</b>	5.29 hPa (25°C, literature data)
<b>Flash Point (°C):</b>	48.5 (Closed cup)
<b>Flammability Limits (%):</b>	2.0-15.9
<b>Autoignition Temperature (°C):</b>	>300
<b>Boiling Point/Range (°C):</b>	141 (literature data)
<b>pH:</b>	2 (approx. 70 g/L, 20°C) (literature data)
<b>Viscosity:</b>	1.149 mPa.s @ 25°C (literature data)
<b>Partition Coefficient:</b>	log Pow = 0.46 (n-octanol/water)
<b>Freezing Point/Range (°C):</b>	ca. 13

## 10. STABILITY AND REACTIVITY

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<b>Reactivity:</b>	Reacts with nitric acid. Polymerizes explosively in contact with strong oxidizing agents.
<b>Chemical stability:</b>	This material can undergo polymerisation. Inhibitor is normally added to prevent uncontrolled polymerisation.
<b>Possibility of hazardous reactions:</b>	Risk of spontaneous polymerization by oxygen depletion of the liquid phase. Corrosive to metals in the presence of moisture.
<b>Conditions to avoid:</b>	Avoid exposure to heat, sources of ignition, and open flame. Avoid exposure to direct sunlight. Avoid prolonged storage. Avoid loss or depletion of inhibitor. Avoid freezing temperatures. Avoid exposure to moisture. Avoid oxygen content above the product of less than 5%. Avoid UV-light and other radiation with high energy.
<b>Incompatible materials:</b>	Incompatible with radical formers, free radical initiators, peroxides, mercaptans, nitro-compounds, perborates, azides, ether, ketones, aldehydes, amines, nitrates, nitrites, oxidising agents, reducing agents, strong bases, alkaline reactive substances, acid anhydrides, acid chlorides, concentrated mineral acids, metal salts, inert gas.
<b>Hazardous decomposition products:</b>	No hazardous decomposition products if stored and handled correctly.

## 11. TOXICOLOGICAL INFORMATION

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

<b>Ingestion:</b>	Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract.
<b>Eye contact:</b>	A severe eye irritant. Corrosive to eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury.
<b>Skin contact:</b>	Contact with skin will result in severe irritation. Corrosive to skin - may cause skin burns. Can be absorbed through the skin with resultant adverse effects.
<b>Inhalation:</b>	Breathing in vapour may produce respiratory irritation. Breathing in vapour can result in headaches, dizziness, drowsiness, and possible nausea.

### Acute toxicity:

Oral LD50 (rat): 1500 mg/kg.

Dermal LD50 (rabbit): >2000 mg/kg.

Inhalation LC50 (rat): >5.1 mg/L/4h.

<b>Skin corrosion/irritation:</b>	Corrosive (rabbit).
<b>Serious eye damage/irritation:</b>	Risk of serious damage to eyes.
<b>Respiratory or skin sensitisation:</b>	Not a skin sensitiser (animal tests).

**Chronic effects:** Acrylic acid is an IARC Group 3 carcinogen (not classifiable as to human carcinogenicity).

**Aspiration hazard:** Not applicable.

## 12. ECOLOGICAL INFORMATION

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<b>Ecotoxicity</b>	Avoid contaminating waterways.
<b>Persistence/degradability:</b>	The material is readily biodegradable. Inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.
<b>Bioaccumulative potential:</b>	Bioconcentration Factor (BCF): 3.2
<b>Mobility in soil:</b>	The substance will not evaporate into the atmosphere from the water surface.
DOC Removal:	90-100% (9 d)
<b>Aquatic toxicity:</b>	Toxic to aquatic organisms. May cause long lasting harmful effects to aquatic life.
48hr EC50 (Daphnia magna):	95 mg/L.
96hr LC50 (fish):	27 mg/L (Oncorhynchus mykiss).
96hr EC50 (algae):	<0.13 mg/L (growth rate)

## 13. DISPOSAL CONSIDERATIONS

### Disposal methods:

Refer to Waste Management Authority. Dispose of material through a licensed waste contractor. Normally suitable for incineration by an approved agent.

## 14. TRANSPORT INFORMATION

### Road and Rail Transport

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



<b>UN No:</b>	2218
<b>Transport Hazard Class:</b>	8 Corrosive
<b>Subrisk 1:</b>	3 Flammable Liquid
<b>Packing Group:</b>	II
<b>Proper Shipping Name or Technical Name:</b>	ACRYLIC ACID, STABILIZED
<b>Hazchem or Emergency Action Code:</b>	- 2W

### Marine Transport

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

<b>UN No:</b>	2218
<b>Transport Hazard Class:</b>	8 Corrosive
<b>Subrisk 1:</b>	3 Flammable liquid
<b>Packing Group:</b>	II
<b>Proper Shipping Name or Technical Name:</b>	ACRYLIC ACID, STABILIZED

<b>IMDG EMS Fire:</b>	F-E
<b>IMDG EMS Spill:</b>	S-C

Product Name: ACRYLIC ACID  
Substance No: 000030121001

Issued: 03/07/2018  
Version: 6



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**Marine Pollutant** Yes

## **Air Transport**

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

**UN No:** 2218  
**Transport Hazard Class:** 8 Corrosive  
**Subrisk 1:** 3 Flammable Liquid  
**Packing Group:** II  
**Proper Shipping Name or Technical Name:** ACRYLIC ACID, STABILIZED

## **15. REGULATORY INFORMATION**

### **Classification:**

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

### **Classification of the chemical:**

Flammable liquids - Category 3  
Acute Oral Toxicity - Category 4  
Acute Dermal Toxicity - Category 4  
Acute Inhalation Toxicity - Category 4  
Skin Corrosion - Sub-category 1A  
Eye Damage - Category 1  
Specific target organ toxicity (single exposure) - Category 3

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

Acute Aquatic Toxicity - Category 1  
Chronic Aquatic Toxicity - Category 2

### **Hazard Statement(s):**

H226 Flammable liquid and vapour.  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.

**Poisons Schedule (SUSMP):** None allocated.

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

## **16. OTHER INFORMATION**

Supplier Safety Data Sheet; 01/ 2016.

This safety data sheet has been prepared by Ixom Operations Pty Ltd Toxicology & SDS Services.

### **Reason(s) for Issue:**

Revised Primary SDS



# Safety Data Sheet



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.