

# Safety Data Sheet



## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name:** **FORMIC ACID >85%**

**Other name(s):** Formic acid 90%; Methanoic acid 90%; Hydrogen carboxylic acid 90%.

**Recommended Use of the Chemical and Restrictions on Use** Intermediate.

**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  
Corrosive to Metals - Category 1  
Acute Oral Toxicity - Category 4  
Skin Corrosion - Sub-category 1B  
Eye Damage - Category 1  
Acute Inhalation Toxicity - Category 3  
Specific target organ toxicity (single exposure) - Category 1

**SIGNAL WORD:** DANGER



### Hazard Statement(s):

H226 Flammable liquid and vapour.  
H290 May be corrosive to metals.  
H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H331 Toxic if inhaled.  
H370 Causes damage to organs.

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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.  
P234 Keep only in original container.  
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 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.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P363 Wash contaminated clothing before re-use.  
P321 Specific treatment (see First Aid Measures on Safety Data Sheet).  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P311 Call a POISON CENTER or doctor/physician.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P370+P378 In case of fire: Use extinguishing media as outlined in Section 5 of this Safety Data Sheet to extinguish.  
P390 Absorb spillage to prevent material damage.

### 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.  
P406 Store in corrosive resistant container with a resistant inner liner.

### Disposal:

P501 Dispose of contents and container in accordance with local, regional, national, international regulations.

### Other Hazards:

AUH071 Corrosive to the respiratory tract.

**Poisons Schedule (SUSMP):** S5 Caution.

## 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion	Hazard Codes
Formic acid	64-18-6	>85%	H226 H290 H302 H314 H331 H370
Water	7732-18-5	to 100%	-

## 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 discolouration 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.

## **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:**

Combustible liquid. May form flammable vapour mixtures with air.

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

On burning will emit toxic fumes, including those of carbon monoxide. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion. Keep containers cool with water spray.

## **6. ACCIDENTAL RELEASE MEASURES**

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

Shut off all possible sources of ignition. Clear area of all unprotected personnel. 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. Use non-sparking tools. For large amounts, pump off product.

## **7. HANDLING AND STORAGE**

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This material is a Scheduled Poison S5 and must be stored, maintained and used in accordance with the relevant regulations.

## **Precautions for safe handling:**

Avoid skin and eye contact and breathing in vapour, mists and aerosols. Keep out of reach of children. Avoid all ignition sources. Take precautionary measures against static discharges. When using do not eat, drink or smoke. Wash hands thoroughly after handling. Launder contaminated clothing before reuse.

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

Store in a cool, dry, well ventilated place. Store below 30°C. Store away from sources of heat or ignition. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Keep containers closed when not in use - check regularly for leaks.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control Parameters:** No value assigned for this specific material by Safe Work Australia. However, Workplace Exposure Standard(s) for constituent(s):

Formic acid: 8hr TWA = 9.4 mg/m<sup>3</sup> (5 ppm), 15 min STEL = 19 mg/m<sup>3</sup> (10 ppm)

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.

STEL (Short Term Exposure Limit) - the airborne concentration of a particular substance calculated as a time-weighted average over 15 minutes, which should not be exceeded at any time during a normal eight hour work day. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.

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:**

Ensure ventilation is adequate and that air concentrations of components are controlled below quoted 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.

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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 air supplied respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b>	Liquid
<b>Colour:</b>	Colourless to Yellow
<b>Odour:</b>	Pungent
<b>Odour Threshold:</b>	>11 ppm
<b>Solubility:</b>	Miscible in water.
<b>Specific Gravity:</b>	1.195 @20°C
<b>Relative Vapour Density (air=1):</b>	>1
<b>Vapour Pressure (20 °C):</b>	24.2 hPa
<b>Flash Point (°C):</b>	65 (DIN 51755)
<b>Flammability Limits (%):</b>	14.9 - 47.6
<b>Autoignition Temperature (°C):</b>	500
<b>Boiling Point/Range (°C):</b>	107.3
<b>pH:</b>	2.2 (10 g/L, 20°C)
<b>Viscosity:</b>	1.4 mPa.s @20°C (Dynamic)
<b>Freezing Point/Range (°C):</b>	-13

## 10. STABILITY AND REACTIVITY

<b>Reactivity:</b>	Corrosive to most metals liberating flammable hydrogen gas.
<b>Chemical stability:</b>	Stable under normal conditions of use. Slow decomposition possible.
<b>Possibility of hazardous reactions:</b>	Reacts with alkalis , and amines .
<b>Conditions to avoid:</b>	Avoid exposure to heat, sources of ignition, and open flame. Avoid contact with foodstuffs. Avoid temperatures above 30 °C. Avoid exposure to direct sunlight.
<b>Incompatible materials:</b>	Incompatible with alkalis, amines, bases, non-coated metals, base metals, strong oxidising agents, concentrated sulphuric acid, nitromethane, permanganates.
<b>Hazardous decomposition products:</b>	Carbon monoxide.

## 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:

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<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.
<b>Inhalation:</b>	Corrosive to the respiratory tract.
<b>Acute toxicity:</b>	No LD50 data available for the product. For the constituent Formic acid : Oral LD50 (rat): 730 mg/kg. Inhalation LC50 (rat): 7.4 mg/L/4hr.
<b>Skin corrosion/irritation:</b>	Corrosive (rabbit).
<b>Respiratory or skin sensitisation:</b>	Not a skin sensitiser (guinea pig).
<b>Chronic effects:</b>	No mutagenic effect was found in various tests with bacteria and mammalian cell cultures.
<b>Carcinogenicity:</b>	Not listed as carcinogenic according to the International Agency for Research on Cancer (IARC).
<b>Reproductive toxicity:</b>	No evidence of reproductive effects.
<b>Specific Target Organ Toxicity (STOT) - single exposure:</b>	Causes damage to organs.
<b>Specific Target Organ Toxicity (STOT) - repeated exposure:</b>	No information available.
<b>Aspiration hazard:</b>	No information available.

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	Avoid contaminating waterways.
<b>Persistence/degradability:</b>	The material is readily biodegradable. Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.
<b>Bioaccumulative potential:</b>	Does not bioaccumulate.
<b>Mobility in soil:</b>	High mobility in soil.
48hr EC50 (Daphnia magna):	32.19 mg/L.
96hr LC50 (fish):	68 mg/L (Leuciscus idus; static; nominal concentration)

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods:**  
Refer to Waste Management Authority. Dispose of material through a licensed waste contractor. Advise flammable nature. Normally suitable for incineration by an approved agent.

## 14. TRANSPORT INFORMATION

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## 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.



**UN No:** 1779  
**Transport Hazard Class:** 8 Corrosive  
**Subrisk 1:** 3 Flammable Liquid  
**Packing Group:** II  
**Proper Shipping Name or Technical Name:** FORMIC ACID SOLUTION  
**Hazchem or Emergency Action Code:** . 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.

**UN No:** 1779  
**Transport Hazard Class:** 8 Corrosive  
**Subrisk 1:** 3 Flammable liquid  
**Packing Group:** II  
**Proper Shipping Name or Technical Name:** FORMIC ACID SOLUTION

**IMDG EMS Fire:** F-E  
**IMDG EMS Spill:** S-C

**Marine Pollutant** No

## 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:** 1779  
**Transport Hazard Class:** 8 Corrosive  
**Subrisk 1:** 3 Flammable Liquid  
**Packing Group:** II  
**Proper Shipping Name or Technical Name:** FORMIC ACID SOLUTION

## 15. REGULATORY INFORMATION

### **Classification:**

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

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Flammable liquids - Category 3  
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H331 Toxic if inhaled.  
H370 Causes damage to organs.

**Poisons Schedule (SUSMP):** S5 Caution.

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

## 16. OTHER INFORMATION

Supplier Safety Data Sheet; 04/ 2018.

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

## Reason(s) for Issue:

5 Yearly Revised Primary SDS

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.