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**1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER**

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**1.1 Product identifier**

**Product name**            **FORMIC ACID**  
**Synonyms**                FORMIC ACID WITH MORE THAN 85% ACID BY MASS

**1.2 Uses and uses advised against**

**Uses**                        INDUSTRIAL APPLICATIONS • SPECIALTY CHEMICAL • SURFACE FINISHING

**1.3 Details of the supplier of the product**

**Supplier name**            **DUBOIS CHEMICALS AUSTRALIA PTY LIMITED**  
**Address**                    305 Frankston Dandenong Rd, Dandenong South, VIC, 3175, AUSTRALIA  
**Telephone**                (03) 9768 3860  
**Email**                        [sales@duboischchemicals.com.au](mailto:sales@duboischchemicals.com.au)  
**Website**                    <http://duboischchemicals.com.au/>

**1.4 Emergency telephone numbers**

**Emergency**                13 11 26 (Poisons Information Centre)

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**2. HAZARDS IDENTIFICATION**

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**2.1 Classification of the substance or mixture**

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

**Physical Hazards**

Flammable Liquids: Category 3

**Health Hazards**

Acute Toxicity: Oral: Category 4  
Skin Corrosion/Irritation: Category 1A  
Serious Eye Damage / Eye Irritation: Category 1  
Acute Toxicity: Inhalation: Category 3

**Environmental Hazards**

Not classified as an Environmental Hazard

**2.2 GHS Label elements**

**Signal word**                **DANGER**

**Pictograms****Hazard statements**

H226                        Flammable liquid and vapour.  
H302                        Harmful if swallowed.  
H314                        Causes severe skin burns and eye damage.  
H318                        Causes serious eye damage.  
H331                        Toxic if inhaled.

## PRODUCT NAME FORMIC ACID

### Prevention statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P243	Take action to prevent static discharges.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash 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/hearing protection.

### Response statements

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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 CENTRE or doctor/physician.
P321	Specific treatment is advised - see first aid instructions.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use appropriate media to extinguish.

### Storage statements

P403 + P233 + P235	Store in a well-ventilated place. Keep cool. Keep container tightly closed.
P405	Store locked up.

### Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.
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### 2.3 Other hazards

No information provided.

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## 3. COMPOSITION/ INFORMATION ON INGREDIENTS

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### 3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
FORMIC ACID	64-18-6	200-579-1	>80%

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## 4. FIRST AID MEASURES

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### 4.1 Description of first aid measures

<b>Eye</b>	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
<b>Inhalation</b>	If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.
<b>Skin</b>	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
<b>Ingestion</b>	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. Rinse mouth with water.
<b>First aid facilities</b>	Eye wash facilities and safety shower should be available.

### 4.2 Most important symptoms and effects, both acute and delayed

Causes severe skin burns and eye damage.

### 4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

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## 5. FIRE FIGHTING MEASURES

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### 5.1 Extinguishing media

Dry agent, carbon dioxide or water fog. Prevent contamination of drains and waterways.

**5.2 Special hazards arising from the substance or mixture**

Flammable. May evolve carbon oxides and hydrocarbons when heated to decomposition. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones, etc when handling. Earth containers when dispensing fluids.

**5.3 Advice for firefighters**

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

**5.4 Hazchem code**

•2W

•2     Alcohol Resistant Foam is the preferred firefighting medium but, if it is not available, fine water spray can be used.

W     Risk of violent reaction or explosion. Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

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**6. ACCIDENTAL RELEASE MEASURES**

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**6.1 Personal precautions, protective equipment and emergency procedures**

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible and eliminate ignition sources. Contact emergency services where appropriate.

**6.2 Environmental precautions**

Prevent product from entering drains and waterways.

**6.3 Methods of cleaning up**

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

**6.4 Reference to other sections**

See Sections 8 and 13 for exposure controls and disposal.

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**7. HANDLING AND STORAGE**

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**7.1 Precautions for safe handling**

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

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

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should be banded and have appropriate ventilation systems.

**7.3 Specific end uses**

No information provided.

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**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

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**8.1 Control parameters****Exposure standards**

Ingredient	Reference	TWA		STEL	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Formic acid	SWA [AUS]	5	9.4	10	19

**Biological limits**

No biological limit values have been entered for this product.

**8.2 Exposure controls****Engineering controls**

Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Flammable/explosive vapours may accumulate in poorly ventilated areas. Vapours are heavier than air and may travel some distance to an ignition source and flash back.

**PRODUCT NAME    FORMIC ACID****PPE**

<b>Eye / Face</b>	Wear splash-proof goggles. At high vapour levels, wear a faceshield.
<b>Hands</b>	Wear latex gloves.
<b>Body</b>	Wear coveralls. When using large quantities or where heavy contamination is likely, wear rubber boots and a PVC apron.
<b>Respiratory</b>	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator or an Air-line respirator.



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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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**9.1 Information on basic physical and chemical properties**

<b>Appearance</b>	COLOURLESS LIQUID
<b>Odour</b>	STINGING ODOUR
<b>Flammability</b>	FLAMMABLE
<b>Flash point</b>	49.5°C (cc)
<b>Boiling point</b>	100.8°C
<b>Melting point</b>	8.5°C
<b>Evaporation rate</b>	NOT AVAILABLE
<b>pH</b>	2.2 (1 % solution)
<b>Vapour density</b>	1.59 (Air = 1)
<b>Relative density</b>	1.22
<b>Solubility (water)</b>	SOLUBLE
<b>Vapour pressure</b>	171 hPa @ 50°C
<b>Upper explosion limit</b>	38 %
<b>Lower explosion limit</b>	18 %
<b>Partition coefficient</b>	-2.1 (n-Octanol/Water)
<b>Autoignition temperature</b>	528°C
<b>Decomposition temperature</b>	350°C
<b>Viscosity</b>	1.47 cSt @ 20°C
<b>Explosive properties</b>	NOT AVAILABLE
<b>Oxidising properties</b>	NOT AVAILABLE
<b>Odour threshold</b>	0.02 ppm

**9.2 Other information**

<b>Surface Tension</b>	71.5 mN/m
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**10. STABILITY AND REACTIVITY**

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**10.1 Reactivity**

Carefully review all information provided in sections 10.2 to 10.6.

**10.2 Chemical stability**

Stable under recommended conditions of storage.

**10.3 Possibility of hazardous reactions**

Polymerization is not expected to occur.

**10.4 Conditions to avoid**

Avoid heat, sparks, open flames and other ignition sources.

**10.5 Incompatible materials**

Incompatible with oxidising agents (e.g. hypochlorites), alkalis (e.g. sodium hydroxide), metals, heat and ignition sources.

**10.6 Hazardous decomposition products**

May evolve carbon oxides and hydrocarbons when heated to decomposition.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity** Ingestion may result in severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. The lowest reported median lethal dose (LD50) for formic acid in rats is 730 mg/kg bw (OECD, 2008; EPA, 2001). Exposure to a saturated vapour concentration of formic acid for a period of three minutes has been shown to cause death in rats (OECD, 2008; REACH, 2011). Harmful if swallowed. Toxic by inhalation.

**Information available for the ingredients:**

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
FORMIC ACID	700 mg/kg (mouse)	--	6200 mg/m <sup>3</sup> /15 min. (mouse)

**Skin** Causes severe burns. Contact may result in irritation, redness, pain, rash, dermatitis and severe burns. Effects may be delayed.

**Eye** Causes severe burns. Contact may result in irritation, lacrimation, pain, redness, corneal burns and serious eye damage.

**Sensitisation** Not classified as causing skin or respiratory sensitisation.

**Mutagenicity** Not classified as a mutagen.

**Carcinogenicity** Not classified as a carcinogen.

**Reproductive** Not classified as a reproductive toxin.

**STOT - single exposure** Over exposure may result in mucous membrane irritation of the respiratory tract, coughing and possible burns. High level exposure may result in ulceration of the respiratory tract, breathing difficulties, chemical pneumonitis and pulmonary oedema.

**STOT - repeated exposure** Not classified as causing organ damage from repeated exposure. Adverse effects are generally associated with single exposure.

**Aspiration** Not classified as causing aspiration.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Harmful effect due to pH shift.

### 12.2 Persistence and degradability

Expected to be readily biodegradable.

### 12.3 Bioaccumulative potential

Not expected to bioaccumulate.

### 12.4 Mobility in soil

No information provided.

### 12.5 Other adverse effects

Avoid contamination of drains and waterways.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

**Waste disposal** Dilute with water and neutralise with soda ash or sodium bicarbonate. Ensure solution is neutral to litmus and flush to sewer with excess water. Alternatively, mix with flammable solvent burn in an incinerator fitted with afterburner and scrubber. Prevent environmental contamination as aquatic life may be threatened.

**Legislation** Dispose of in accordance with relevant local legislation.

## 14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
<b>14.1 UN Number</b>	1779	1779	1779
<b>14.2 Proper Shipping Name</b>	FORMIC ACID	FORMIC ACID	FORMIC ACID
<b>14.3 Transport hazard classes</b>	8 (3)	8 (3)	8 (3)
<b>14.4 Packing Group</b>	II	II	II

**14.5 Environmental hazards**

Not a Marine Pollutant.

**14.6 Special precautions for user**

<b>Hazchem code</b>	●2W
<b>GTEPG</b>	8A1
<b>EmS</b>	F-E, S-C

**15. REGULATORY INFORMATION**

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

<b>Poison schedule</b>	Classified as a Schedule 5 (S5) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
<b>Classifications</b>	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
<b>Inventory listings</b>	<b>AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)</b> All components are listed on AIIC, or are exempt.

**16. OTHER INFORMATION**

<b>Additional information</b>	<p><b>RESPIRATORS:</b> In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.</p> <p><b>EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES:</b> Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: Strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation).</p> <p><b>PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:</b> The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.</p>
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**HEALTH EFFECTS FROM EXPOSURE:**

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m <sup>3</sup>	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

**Report status**

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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