

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name	FORMIC ACID 98%
CAS-No.	64-18-6
Product code	AR1310

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Chemical for analysis and production.
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1.3 Details of the manufacturer of the safety data sheet

Company	RCI LABSCAN LIMITED. 24 Rama 1 Road, Pathumwan, Bangkok 10330 Thailand
Telephone number	(662) 613-7911-4
Fax number	(662) 613-7915

1.4 Emergency Telephone Number

Emergency phone	(662) 613-7911-4
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Flammable liquid and vapour (Category 3), H226
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 3), H331
Skin corrosion (Category 1A), H314
Serious eye damage (Category 1), H318
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Danger

Hazard statement(s)

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

Precautionary statement(s)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe fume/gas/mist/vapours/spray.
P264	Wash hand thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
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 [or shower].
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P354 + P338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do.

2.3 Other hazards

None

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms Methanoic acid.

CAS-No	EC-No	EC-Index-No	Formula	Molecular Weight	Weight %
64-18-6	200-579-1	607-001-00-0	HCOOH	46.03 g/mol	<=100

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Concentration	Classification
Formic acid		
CAS-No 64-18-6 EC-No 200-579-1 EC-Index-No 607-001-00-0	<=100%	Flammable liquid and vapour (Category 3), H226 Acute toxicity, Oral (Category 4), H302 Acute toxicity, Inhalation (Category 3), H331 Skin corrosion (Category 1A), H314 Serious eye damage (Category 1), H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus.
Skin contact	Remove contaminated clothing and wash affected skin with soap and water. Dab with polyethylene glycol 400. Obtain medical attention. If signs of poisoning appear, treat as for inhalation. Wash contaminated clothing before reuse. Contaminated combustible material, e.g. clothing ignites more readily and burns fiercely.
Eye contact	If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention.
Ingestion	After swallowing: make victim drink water (two glasses at the most), avoid vomiting, risk of perforation. Immediately call-in physician. Do not attempt to neutralize.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and section 11

4.3 Indication of any immediate medical attention and special treatment needed

Not Available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Extinguish with carbon dioxide, dry chemical, foam or water spray. In the event of fire, cool tanks with water spray.

5.2 Special hazards arising from the substance or mixture

Combustible. Vapors heavier than air. Vapors may form explosive mixture with air at ambient temperature.

Development of hazardous combustion gases or vapors possible in the event of fire.

5.3 Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

5.4 Further information

Standard procedure for chemical fires.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Remove all sources of ignition. Wear a positive-pressure supplied-air respirator, flame retardant antistatic protective clothing. Shut off leaks if without risk. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil, advise police.

6.3 Methods and materials for containment and cleaning up

Spillage: May react with combustible substances creating fire or explosion hazard and formation of toxic fumes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Soak up with inert absorbent material (e.g. sand, silica gel or chemical absorbent pads). Prevent liquid entering sewers, basements and workpits; vapor may create explosive atmosphere. Transfer to covered steel drums. Dispose of promptly.

6.4 Reference to other sections

For disposal see **Section 13**.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Keep container tightly closed. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Do not empty into drains.

7.2 Conditions for safe storage, including any incompatibilities

Keep tightly closed in a dry, cool and well-ventilated place. Keep at +15°C to +25°C. Keep away from heat and sources of ignition. Keep out of direct sunlight and away from incompatible materials. Store in original container. Electrical equipment should be protected to the appropriate standard. Requirements for containers, no metal containers.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL)

Application Area	Health Effects	Exposure	Value
Worker	Acute Local effects	Inhalation	9.5 mg/m ³
Worker	Long-term Local effects	Inhalation	9.5 mg/m ³
Consumer	Acute Local effects	Inhalation	9.5 mg/m ³
Consumer	Long-term Local effects	Inhalation	3 mg/m ³

Predicted No Effect Concentration (PNEC)

Compartment	Value
Fresh water	2 mg/l
Fresh water sediment	13.4 mg/kg
Marine water	0.2 mg/l
Marine sediment	1.34 mg/kg
Sewage treatment plant	7.2 mg/l

8.2 Exposure controls

Appropriate engineering controls

The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Ventilation hoods and fans required when working with organic solvents or in hot melt applications.

Individual protection measures (Personal protective equipment, PPE)

Eye/face protection

Goggles giving complete protection to eyes.

Skin protection

Chemical resistant apron / flame retardant antistatic protective clothing, heavy duty work shoes.

Handle with gloves

- Full contact wears gloves from chloroprene material.
- Splash contact wears gloves from natural rubber material.

The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Required when vapor/aerosols are generated filter E-(P3) (EN 141 or EN 14387).

Environmental exposure controls

Prevent liquid entering sewers, basements and workpits.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Color	Colorless
Odour	Pungent
Odour Threshold	Not Available
pH	2.2 at 10g/l (H ₂ O) at 20°C
Melting point/range	8.5°C
Boiling point/range	100.80°C at 1013 hPa
Flash point	49.5 °C (closed cup)
Evaporation rate	Not Available
Flammability (solid, gas)	Not Available
Explosion limits: lower	18 %(V)

upper	38 %(V)
Vapor Pressure	171 hPa at 50°C
Relative Vapor Density	1.59
Density	1.22 g/ml at 20°C
Water solubility	Soluble at 20°C
Partition coefficient (n-octanol/water)	log Pow: -2.1
Auto-Ignition temperature	528 °C
Decomposition Temperature	350 °C
Viscosity	1.47 mm ² /s at 40°C
Explosive properties	Not Explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.

SECTION 10: Stability and reactivity

10.1 Reactivity

In flammable.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Risk of explosion in contact with hydrogen peroxide, furfuryl alcohol, sodium hypochlorite (heat), nickel catalysts and nitromethane.

The substance can react dangerously with bases, aluminum, oxidizing agents, nitric acid, sulfuric acid, alkali hydroxides (conc.), alkaline earth hydroxides (conc.), heat, phosphorus pentoxide and thallium trinitrate trihydrate.

10.4 Conditions to avoid

Heating.

10.5 Incompatible materials

Oxidizing agent, base.

10.6 Hazardous decomposition products

Carbon monoxides, carbon dioxides (Hazardous decomposition products from under fire condition).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD₅₀ (oral, rat): 730 mg/kg

LC₅₀ (inhalation, rat): 7.85 mg/l/4 h

Acute oral toxicity

Risk of perforation in the esophagus and stomach.

Acute inhalation toxicity

Corrosive to the respiratory tract.

Skin corrosion/irritation

Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

Not Available

Germ cell mutagenicity

Bacterial mutagenicity; Salmonella typhimurium is negative.

Carcinogenicity

Not Available

Reproductive toxicity

Not Available

Teratogenicity

No teratogenic effect in animal experiments.

Specific target organ toxicity (STOT) - single exposure

Corrosive to the respiratory tract.

Specific target organ toxicity (STOT) - repeated exposure

Not Available

Aspiration hazard

Not Available

Further information

The product should be handled with the care usual when dealing with chemicals.

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish	LC ₅₀ Danio rerio: 130 mg/l/96h
Toxicity to daphnia and other aquatic invertebrates	EC ₅₀ Daphnia magna: 365 mg/l/48h
Toxicity to algae	ErC ₅₀ Pseudokirchneriella subcapitata: 1240 mg/l/72h

12.2 Persistence and degradability

Biodegradability	100%/14 d, Readily biodegradable.
Biochemical Oxygen Demand (BOD)	86 mg/g.

12.3 Bioaccumulative potential

Partition coefficient (n-octanol/water)	log Pow: -2.1
	No bioaccumulation is to be expected (log P o/w <1)

12.4 Mobility in soil

Not Available

12.5 Results of PBT and vPvB assessment

Not Available

12.6 Other adverse effects

Do not allow to enter waters, waste water or soil.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Contaminated packaging

Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

SECTION 14: Transport information

Land Transport (ADR/RID)

UN Number	1779
UN proper shipping name	FORMIC ACID
Transport hazard class(es)	8 (3)
Packing group	II
Environmental hazards	No
Special precautions for user	Yes

Sea transport (IMDG)

UN Number	1779
UN proper shipping name	FORMIC ACID
Transport hazard class(es)	8 (3)
Packing group	II
Marine pollutant	No
Special precautions for user	Yes
EmS	F-E S-C

Air transport (IATA)

UN Number	1779
UN proper shipping name	FORMIC ACID
Transport hazard class(es)	8 (3)
Packing group	II
Environmental hazards	No
Special precautions for user	No

River transport (AND/ADNR)

(Not examined)

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

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

Not Available

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3

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

Recommended restrictions

Take notice of labels and safety data sheets for the working. Chemicals Take necessary action to avoid static electricity discharge.

Reference

Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Labelling according to EC Directives 67/548 EEC and Regulation (EC) No 1272/2008.

Transportation information according to Recommendations on the Transport of Dangerous Goods, Model Regulations. Twelfth revised edition. United Nations.

Institute for Occupational Safety and Health of the German Social Accident Insurance in Sankt Augustin/Germany, Source: IFA for Databases on hazardous substances (GESTIS).

Further information

Contact to RCI Labscan Limited.

Revision Date

17/07/2024

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.