

SECTION 1: Identification

1.1. Product identifier

Trade name : FORMIC ACID 85%
 EC-No. : 200-579-1
 EC Index-No. : 607-001-00-0
 CAS-No. : 64-18-6
 UN-No. (ADR) : 1779
 Product code : 106110xxx
 Formula : CH2O2

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

Recommended uses and restrictions : For laboratory use only

1.3. Supplier's details

Labchem (Pty)Ltd
 6 Wakefield Road
 Founders Hill
 1609 Johannesburg - South Africa
 T +27 11 452 1116 - F +27 86 588 0293
techlab@labchem.co.za - www.labchem.co.za

1.4. Emergency telephone number

Emergency number : +27 11 452 1116

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

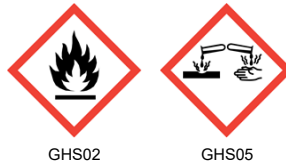
Classification according to the United Nations GHS

Flammable liquids, Category 3 H226
 Skin corrosion/irritation, Category 1A H314
 Full text of H statements : see section 16

2.2. Label elements

Labelling according to the United Nations GHS

Hazard pictograms (GHS-ZA) :



Signal word (GHS-ZA) : Danger

Hazard statements (GHS-ZA) : H226 - Flammable liquid and vapour.
 H314 - Causes severe skin burns and eye damage.

Precautionary statements (GHS-ZA) : 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 equipment.
 P242 - Use non-sparking tools.
 P243 - Take action to prevent static discharges.
 P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
 P264 - Wash hands, forearms and face 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/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 CENTER or doctor.
 P321 - Specific treatment (see supplemental first aid instruction on this label).
 P363 - Wash contaminated clothing before reuse.
 P370+P378 - In case of fire: Use media other than water to extinguish.
 P403+P235 - Store in a well-ventilated place. Keep cool.
 P405 - Store locked up.
 P501 - Dispose of contents/container to hazardous or special waste collection point, in

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According to SANS 10234:2008 and SANS 11014:2010

accordance with local, regional, national and/or international regulation.

2.3. Other hazards

Adverse physicochemical, human health and environmental effects : Flammable liquid and vapour, Causes severe skin burns and eye damage.

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance identification codes: See section 1.1

Name	Product identifier	%	Classification according to the United Nations GHS
formic acid (Main constituent)	(CAS-No.) 64-18-6	≥ 85	Flam. Liq. 3, H226 Skin Corr. 1A, H314

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Call a physician immediately.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Immediately consult a doctor/medical service.
- First-aid measures after skin contact : Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital. Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a physician immediately.
- First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
- First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Do not give activated charcoal. Immediately consult a doctor/medical service. Call Poison Information Centre (www.big.be/antigif.html). Ingestion of large quantities: immediately to hospital. Take the container/vomit to the doctor/hospital. Do not give chemical antidote. Rinse mouth. Do not induce vomiting. Call a physician immediately.

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

- Symptoms/effects after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Corrosion of the upper respiratory tract. Dry/sore throat. Coughing. Nausea. Respiratory difficulties. FOLLOWING SYMPTOMS MAY APPEAR LATER: Affection of the nasal septum. Risk of lung oedema. Respiratory collapse.
- Symptoms/effects after skin contact : Caustic burns/corrosion of the skin. Burns.
- Symptoms/effects after eye contact : Corrosion of the eye tissue. Serious damage to eyes.
- Symptoms/effects after ingestion : Nausea. Abdominal pain. Risk of aspiration pneumonia. Change in the haemogramme/blood composition. Burns to the gastric/intestinal mucosa. Possible esophageal perforation. Blood in vomit. Bleeding of the gastrointestinal tract. Blood in stool. Shock. Low arterial pressure. Disturbances of consciousness. Decreased renal function. Burns.
- Chronic symptoms : No effects known.
- Potential adverse human health effects and symptoms : Causes severe skin burns. Causes serious eye damage.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Quick-acting ABC powder extinguisher. Quick-acting BC powder extinguisher. Quick-acting class B foam extinguisher. Quick-acting CO2 extinguisher. Class B foam (alcohol-resistant). Water spray if puddle cannot expand. Water spray. Dry powder. Foam. Carbon dioxide.
- Unsuitable extinguishing media : Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

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According to SANS 10234:2008 and SANS 11014:2010

5.2. Special hazards arising from the substance or mixture

- Fire hazard : DIRECT FIRE HAZARD: Flammable liquid and vapour. Gas/vapour flammable with air within explosion limits. INDIRECT FIRE HAZARD: May be ignited by sparks. Reactions involving a fire hazard: see "Reactivity Hazard". Flammable liquid and vapour.
- Explosion hazard : DIRECT EXPLOSION HAZARD: Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD: may be ignited by sparks. Reactions with explosion hazards: see "Reactivity Hazard".
- Hazardous decomposition products in case of fire : Upon combustion: CO and CO₂ are formed.

5.3. Advice for firefighters

- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

6.1.1. For non-emergency personnel

- Protective equipment : Gas-tight suit. Corrosion-proof suit.
- Emergency procedures : Ventilate spillage area. Keep upwind. Mark the danger area. Consider evacuation. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Keep containers closed. Wash contaminated clothes. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. Compressed air/oxygen apparatus. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

- For containment : Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Do not use compressed air for pumping over spills. Dilute combustible/toxic gases/vapours with water spray. Take account of toxic/corrosive precipitation water. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain.
- Methods for cleaning up : Take up liquid spill into absorbent material. Neutralize spill with powdered limestone or sodium bicarbonate. Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling. Notify authorities if product enters sewers or public waters.
- Other information : Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Use spark-/explosionproof appliances and lighting system. Use earthed equipment. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray.
- Hygiene measures : Observe strict hygiene. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Ground/bond container and receiving equipment.
- Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

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According to SANS 10234:2008 and SANS 11014:2010

Storage area	: Store in a cool area. Store in a dry area. Ventilation at floor level. Fireproof storeroom. Keep locked up. Protect against frost. Provide for a tub to collect spills. Unauthorized persons are not admitted. Store only in a limited quantity. Meet the legal requirements.
Heat and ignition sources	: KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases. amines.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. with pressure relief valve. corrosion-proof. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: stainless steel. carbon steel. glass. MATERIAL TO AVOID: steel. lead. aluminium. iron. copper. zinc.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

FORMIC ACID 85% (64-18-6)	
South Africa - Occupational Exposure Limits (Recommended Limits)	
Local name	Formic Acid
OEL TWA (mg/m ³)	9 mg/m ³
OEL TWA (ppm)	5 ppm
Regulatory reference	Government Notice. R: 1179

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Materials for protective clothing : GIVE GOOD RESISTANCE: butyl rubber. natural rubber. neoprene. nitrile rubber. polyurethane. PVC. styrene-butadiene rubber. GIVE LESS RESISTANCE: chlorinated polyethylene. viton. neoprene/SBR. nitrile rubber/PVC. GIVE POOR RESISTANCE: polyethylene

Hand protection : Gloves

Eye protection : Safety glasses

Skin and body protection : Head/neck protection. Corrosion-proof clothing

Respiratory protection : Full face mask with filter type A at conc. in air > exposure limit. High vapour/gas concentration: self-contained respirator

Personal protective equipment symbol(s):



8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 46.03 g/mol
Colour	: Colourless.
Odour	: Irritating/pungent odour.
Odour threshold	: No data available
pH	: No data available
pH solution	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 59 – 60 °C
Auto-ignition temperature	: > 500 °C (85 % aqueous solution)

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Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Vapour pressure at 50 °C	: No data available
Relative vapour density at 20 °C	: 1.6
Relative density	: 1.2 (85 %)
Relative density of saturated gas/air mixture	: No data available
Density	: 1200 kg/m ³ (85 %)
Relative gas density	: No data available
Solubility	: Soluble in water. Water: complete
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available
Lower explosive limit (LEL)	: No data available
Upper explosive limit (UEL)	: No data available

9.2. Other information

VOC content	: 85 – 90 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Hygroscopic. Producing fumes/mist. Physical properties depending on the concentration. Volatile. Acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts violently with (strong) oxidizers: pressure rise and possible bursting of container. Reacts exothermically with (some) acids/bases. Reacts exothermically with amines. Flammable liquid and vapour.

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Reacts with (some) metals: release of highly flammable gases/vapours (hydrogen). Prolonged storage: decomposes slowly: release of harmful/irritant gases/vapours (carbon monoxide): pressure rise and possible bursting of container. This reaction is accelerated on exposure to some compounds and on exposure to temperature rise. On heating: release of highly flammable gases/vapours (hydrogen).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Causes severe skin burns.
Serious eye damage/irritation	: Assumed to cause serious eye damage
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

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According to SANS 10234:2008 and SANS 11014:2010

Potential adverse human health effects and symptoms : Causes severe skin burns. Causes serious eye damage.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008. Before neutralisation, the product may represent a danger to aquatic organisms.

Ecology - air : None of the known components is included in the list of substances which may contribute to the greenhouse effect (IPCC). None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water : Slightly harmful to crustacea. Slightly harmful to fishes. Inhibition of activated sludge. Not harmful to algae. pH shift. Harmful to plankton.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

12.2. Persistence and degradability

FORMIC ACID 85% (64-18-6)

Persistence and degradability	Contains readily biodegradable component(s).
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12.3. Bioaccumulative potential

FORMIC ACID 85% (64-18-6)

Bioaccumulative potential	Does not contain bioaccumulative component(s).
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12.4. Mobility in soil

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Mobility in soil	No additional information available
Ecology - soil	Contains component(s) with potential for mobility in the soil.

12.5. Other adverse effects

Ozone : Not classified

Other adverse effects : No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Do not discharge into drains or the environment. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an authorized plant for the destruction, neutralization and elimination of hazardous waste.

Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997. Flammable vapours may accumulate in the container.

SECTION 14: Transport information

In accordance with SANS / IMDG / IATA

SANS	IMDG	IATA
14.1. UN number 1779	1779	1779
14.2. Proper Shipping Name FORMIC ACID	FORMIC ACID	Formic acid
14.3. Transport hazard class(es) 8 (3)	8 (3)	8 (3)
		 Not applicable
14.4. Packing group II	II	II

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According to SANS 10234:2008 and SANS 11014:2010

SANS	IMDG	IATA
14.5. Environmental hazards		
Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available		

14.6. Special precautions for user

- SANS

Transport regulations (UN)	: Subject to the provisions
Limited quantities (SANS)	: 1 L
Limited quantities (SANS)	: 1 L
Packagings, large packagings and IBCs	: P001, IBC02
Packing instructions (SANS)	
Portable tank and bulk containers instructions (SANS)	: T7
Portable tank and bulk container special provisions (SANS)	: TP2

- IMDG

Transport regulations (IMDG)	: Subject to the provisions
Limited quantities (IMDG)	: 1 L
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T7
Tank special provisions (IMDG)	: TP2
EmS-No. (Fire)	: F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS
EmS-No. (Spillage)	: S-C - SPILLAGE SCHEDULE Charlie - FLAMMABLE CORROSIVE LIQUIDS
Stowage category (IMDG)	: A
Properties and observations (IMDG)	: Colourless flammable liquid with a pungent odour. Pure FORMIC ACID: flashpoint 42°C c.c. Corrosive to most metals. Causes burns to skin, eyes and mucous membranes.

- IATA

Transport regulations (IATA)	: Subject to the provisions
PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y840
PCA limited quantity max net quantity (IATA)	: 0.5L
PCA packing instructions (IATA)	: 851
PCA max net quantity (IATA)	: 1L
CAO packing instructions (IATA)	: 855
CAO max net quantity (IATA)	: 30L
ERG code (IATA)	: 8F

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health, and environmental national regulations specific for the product

Regulatory reference	: SANS 10234:2008; SANS 11014:2010; SANS 10228:2012;SANS 10229:2010; SANS 10232(1,2,4), SANS 10231:2018; Occupational Health and Safety Act 85 of 1993; National Road Traffic Act 93 of 1996.
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SECTION 16: Other information

Issue date	: 13/02/2020
Revision date	: 13/02/2025

Full text of H-statements:

H226	Flammable liquid and vapour.
H314	Causes severe skin burns and eye damage.

SDS South Africa

The data provided in this Safety Data Sheet (SDS) is correct to the best of our knowledge. The data relates to the specific product as named and is intended as a guide to the safe handling of the product in all its facets. The data may no longer be valid if the product is used in any process or in combination with other products. This SDS is not a quality specification nor any form of guarantee.