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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Product: Formic Acid 85%	**Revision date:** 2026-10-29	**Version:** 1.0	**Brand:** Richest

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

Product name	Formic Acid 85%
Synonyms	Methanoic acid; Formic acid solution
CAS No.	64-18-6
EC No.	200-579-1
Molecular formula	CH_2O_2
Molecular weight	46.03 g/mol
Relevant identified uses	Tanning and leather processing, rubber coagulation, textile dyeing and finishing, silage and feed preservation, descaling and cleaning, chemical synthesis intermediate
Uses advised against	None
Company	Richest Group Ltd.
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SECTION 2: Hazards identification

GHS Classification	Acute toxicity - Oral Category 4; Acute toxicity - Inhalation Category 4; Skin corrosion Category 1A; Serious eye damage Category 1
Pictogram(s)	GHS05 (Corrosion); GHS07 (Exclamation mark)
Signal word	Danger
Hazard statement(s)	H302 Harmful if swallowed H314 Causes severe skin burns and eye damage

Precautionary statement(s)	P261 Avoid breathing mist/vapours/spray P264 Wash hands 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 P304+P340+P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Other hazards	Reacts with concentrated sulfuric acid or other strong dehydrating agents to release toxic carbon monoxide.

SECTION 3: Composition/information on ingredients

Component	Formic acid
CAS No.	64-18-6
EC No.	200-579-1
Classification	Acute Tox. 4; Skin Corr. 1A; Eye Dam. 1; H302, H332, H314, H318
Concentration (%)	≥85% (balance: water)

SECTION 4: First aid measures

If inhaled	Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. Immediately call a POISON CENTER/doctor.
In case of skin contact	Take off immediately all contaminated clothing. Rinse skin with plenty of water/shower. Call a physician immediately.
In case of eye contact	Rinse cautiously with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
If swallowed	Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician immediately.
Most important symptoms and effects	Causes severe skin burns and eye damage; harmful if swallowed or inhaled; vapours cause irritation of eyes and respiratory tract, cough and shortness of breath.
Indication of any immediate medical attention	Treat symptomatically. Show this safety data sheet to the doctor in attendance.

SECTION 5: Firefighting measures

Suitable extinguishing media	Water spray, alcohol-resistant foam, dry chemical, carbon dioxide (CO2)
Unsuitable extinguishing media	Do NOT use water jet on the burning product directly.
Special hazards arising from the chemical	Carbon oxides. Vapours are heavier than air and may spread along floors. Contact with strong oxidizers may cause fire or explosion; reaction with concentrated sulfuric acid releases carbon monoxide.
Advice for firefighters	Wear self-contained breathing apparatus and full protective clothing. Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Methods and materials for containment and cleaning up	Contain spillage, neutralize cautiously with soda ash or lime, then collect with non-combustible absorbent material (e.g. sand, earth) and place in container for disposal according to local/national regulations.

SECTION 7: Handling and storage

Precautions for safe handling	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Ensure adequate ventilation. Keep away from sources of ignition - No smoking.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed in a dry, cool and well-ventilated place. Store in corrosion-resistant containers away from oxidizing agents, strong bases and concentrated sulfuric acid.

SECTION 8: Exposure controls/personal protection

Occupational exposure limit values	TWA: 5 ppm (9.4 mg/m3) - commonly adopted occupational exposure limit for formic acid (ACGIH TLV)
Biological limit values	None established
Appropriate engineering controls	Ensure adequate ventilation, especially in confined areas. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Eye/face protection	Tightly fitting safety goggles and face shield. Use equipment tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
Skin protection	Handle with chemical-resistant gloves (e.g. butyl rubber, EN 374). Gloves

Body protection	Complete suit protecting against chemicals; acid-resistant protective clothing and boots.
Respiratory protection	Where risk assessment shows air-purifying respirators are appropriate, use a full-face respirator with type B (EN 14387) inorganic acid gas cartridges; if the respirator is the sole means of protection, use a full-face supplied air respirator.
Thermal hazards	Not applicable

SECTION 9: Physical and chemical properties

Physical state	Liquid
Colour	Colourless
Odour	Pungent, penetrating odour
Melting point / freezing point	ca. 4 °C (85% solution); 8.4 °C (100% acid)
Boiling point or initial boiling point and boiling range	Approx. 107 °C (85% solution); 100.8 °C (100% acid)
Flammability	Combustible liquid and vapour
Lower and upper explosion limit / flammability limit	Lower: 18 % (V); Upper: 57 % (V) (formic acid)
Flash point	60 °C - closed cup (85% solution)
Auto-ignition temperature	520 °C (formic acid)
Decomposition temperature	Decomposes on heating and on contact with strong dehydrating agents, releasing carbon monoxide
pH	< 2 (acidic; 1% aqueous solution: pH ca. 2.2)
Kinematic viscosity	ca. 1.5 mm2/s at 20 °C (dynamic viscosity: ca. 1.8 mPa·s)
Solubility	Miscible with water in all proportions; soluble in ethanol and ether
Partition coefficient n-octanol/water	log Pow: -2.1 (formic acid)
Vapour pressure	ca. 42 hPa at 20 °C (85% solution)
Density and/or relative density	Approx. 1.19 - 1.20 g/cm3 at 20 °C (85% solution)
Relative vapour density	1.59 (Air = 1.0, formic acid)
Particle characteristics	Not applicable (liquid)

SECTION 10: Stability and reactivity

Reactivity	Reacts violently with strong oxidizing agents and strong bases; reacts with metals with evolution of hydrogen
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Reacts violently with strong oxidizing agents and strong bases. Reaction with concentrated sulfuric acid releases carbon monoxide. Reacts with metals with evolution of hydrogen.
Conditions to avoid	Heat, flames and sparks. Incompatible materials.
Incompatible materials	Strong oxidizing agents, strong bases, concentrated sulfuric acid, metals
Hazardous decomposition products	Carbon oxides; carbon monoxide (on contact with strong dehydrating agents such as concentrated sulfuric acid)

SECTION 11: Toxicological information

Acute toxicity - Oral / Inhalation / Dermal	LD50 Oral - Rat - 730 mg/kg LC50 Inhalation - Rat - 4 h - 7.4 mg/L (formic acid) Dermal: not applicable (corrosive)
Skin corrosion/irritation	Causes severe skin burns.
Serious eye damage/irritation	Causes serious eye damage.
Respiratory or skin sensitization	Not a skin sensitizer (guinea pig)
Germ cell mutagenicity	Negative (Ames test)
Carcinogenicity	Not listed by IARC, NTP or OSHA as a carcinogen
Reproductive toxicity	Not classified (based on available data)
STOT - single exposure	Vapours may cause respiratory tract irritation
STOT - repeated exposure	Not classified (based on available data)
Aspiration hazard	Not classified

SECTION 12: Ecological information

Toxicity to fish / daphnia / algae	Fish: LC50 - Leuciscus idus - 46 - 100 mg/L - 96 h; Daphnia: EC50 - Daphnia magna - 365 mg/L - 48 h; Algae: EC50 - ca. 27 mg/L - 72 h (formic acid)
Persistence and degradability	Readily biodegradable (OECD 301: > 90% within 14 d)
Bioaccumulative potential	Low bioaccumulation potential (log Pow: -2.1)
Mobility in soil	High mobility in soil (miscible with water, low log Koc)
Other adverse effects	May cause pH changes in aquatic systems; harmful effect due to pH shift

SECTION 13: Disposal considerations

Product disposal methods	Offer surplus and non-recyclable solutions to a licensed disposal company. Neutralize cautiously before disposal. Waste material must be disposed of in accordance with applicable national and local regulations.
Contaminated packaging	Dispose of as unused product.

SECTION 14: Transport information

UN Number (ADR/RID, IMDG, IATA)	UN 1779
UN Proper Shipping Name	FORMIC ACID with not less than 85% acid by mass
Transport hazard class(es)	8 (3)
Packing group	II
Environmental hazards (Marine pollutant)	No
Special precautions for user	EmS Code: F-E, S-C

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product	EINECS: Listed (200-579-1) / TSCA: Listed / IECSC: Listed / China Catalog of Hazardous Chemicals 2015: Listed

SECTION 16: Other information

Full text of H-Statements	H302 Harmful if swallowed H314 Causes severe skin burns and eye damage H318 Causes serious eye damage H332 Harmful if inhaled
Revision date	2026-10-29
Version	1.0

Abbreviations and acronyms: CAS: Chemical Abstracts Service; EC: European Commission; EINECS: European Inventory of Existing Commercial Chemical Substances; ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road; RID: Regulation concerning the International Carriage of Dangerous Goods by Rail; IMDG: International Maritime Dangerous Goods; IATA: International Air Transport Association; TWA: Time Weighted Average; STEL: Short Term Exposure Limit; LD50: Lethal Dose 50%; LC50: Lethal Concentration 50%; EC50: Effective Concentration 50%; PBT: Persistent, Bioaccumulative and Toxic; vPvB: very Persistent and very Bioaccumulative; SDS: Safety Data Sheet.

References: ECHA - European Chemicals Agency, https://echa.europa.eu/; IPCS - International Chemical Safety Cards (ICSC), http://www.ilo.org/; HSDB - Hazardous Substances Data Bank; eChemPortal - OECD Global Portal to Information on Chemical Substances; ERG - Emergency Response Guidebook by U.S. DOT.

Disclaimer: The information in this SDS is only applicable to the specified product and is provided in good faith. It is based on the knowledge available to Richest Group Ltd. at the date of issue and is intended to describe the product for the purposes of health, safety and environmental requirements only. It does not constitute any guarantee of the properties of the product. Richest Group Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product.