

MATERIAL SAFETY DATA SHEET

Formic acid

Section 1 - Chemical Product and Company Identification

MSDS Name:	Formic acid
Synonyms:	
Company Identification: (INDIA)	Veritas House, 70 Mint Road, Fort, Mumbai - 400 001. INDIA
For information in the INDIA, call:	Tel: +91 - 22 - 2275 5555 / 6184 0000, Fax: +91 - 22 - 2275 5556 / 6184 0001

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#
64-18-6	Formic acid	85	200-579-1

Hazard Symbols:	C
	
Risk Phrases:	35

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Causes severe burns.

Potential Health Effects

Eye:	Causes severe eye burns. May cause conjunctivitis. Lachrymator (substance which increases the flow of tears). Causes redness and pain. Lachrymator (substance which increases the flow of tears).
Skin:	Causes skin burns. Causes redness and pain.
Ingestion:	Harmful if swallowed. May cause kidney damage. May cause severe digestive tract irritation with abdominal pain, nausea, vomiting and diarrhea. May cause burns to the digestive tract.
Inhalation:	May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.
Chronic:	

Section 4 - First Aid Measures

Eyes:	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin:	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion:	Get medical aid. Wash mouth out with water. Give milk of magnesia.
Inhalation:	If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information:	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Will burn if involved in a fire. Combustible liquid.
Extinguishing Media:	In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam.

Section 6 - Accidental Release Measures

General Information:	Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:	Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container.

Section 7 - Handling and Storage

Handling:	Contents may develop pressure upon prolonged storage. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Use only in a chemical fume hood. Prevent build up of vapors to explosive concentration.
Storage:	Keep away from sources of ignition. Do not store near combustible materials. Store in a dry area. Keep refrigerated. (Store below 4°C/39°F.) Bottles should be vented periodically in order to overcome pressure buildup. Glacial formic acid will slowly decompose to carbon monoxide at room temperature resulting in increased pressure if containers are sealed or unvented.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits	CAS# 64-18-6: United Kingdom, WEL - TWA: 5 ppm TWA; 9.6 mg/m3 TWA United Kingdom, WEL - STEL: 15 ppm STEL; 28.8 mg/m3 STEL United States OSHA: 5 ppm TWA; 9 mg/m3 TWA Belgium - TWA: 5 ppm VLE; 9.5 mg/m3 VLE Belgium - STEL: 10 ppm VLE; 19 mg/m3 VLE France - VLE: 5 ppm VLE; 9 mg/m3 VLE Germany: 5 ppm TWA; 9.5 mg/m3 TWA Japan: 5 ppm OEL; 9.4 mg/m3 OEL Malaysia: 5 ppm TWA; 9.4 mg/m3 TWA Netherlands: 5 ppm MAC; 9 mg/m3 MAC Spain: 5 ppm VLA-ED; 9 mg/m3 VLA-ED Spain: 10 ppm VLA-EC; 18 mg/m3 VLA-EC

Personal Protective Equipment

Eyes:	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin:	Wear appropriate protective gloves to prevent skin exposure.

Clothing:	Wear appropriate protective clothing to minimize contact with skin.
Respirators:	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State:	Clear liquid
Color:	colorless
Odor:	pungent odor
pH:	2.1 (10 g/l aq soln)
Vapor Pressure:	44mbar @20 deg C
Viscosity:	1.47 mPas @20 deg C
Boiling Point:	106 deg C @760mmHg (213.80°F)
Freezing/Melting Point:	8 deg C (46.40°F)
Autoignition Temperature:	520 deg C (968.00 deg F)
Flash Point:	50 deg C (122.00 deg F)
Explosion Limits: Lower:	14 Vol %
Explosion Limits: Upper:	33 Vol %
Decomposition Temperature:	Not available
Solubility in water:	Miscible with water
Specific Gravity/Density:	1.920 g cc
Molecular Formula:	CH ₂ O ₂
Molecular Weight:	46.02

Section 10 - Stability and Reactivity

Chemical Stability:	Hygroscopic: absorbs moisture or water from the air. Keep refrigerated. Formic acid may decompose to carbon monoxide and water or carbon dioxide and hydrogen gas. These decomposition products develop pressure. Heat sensitive.
Conditions to Avoid:	Incompatible materials, exposure to moist air or water.
Incompatibilities with Other Materials	Metals, strong oxidizing agents, strong bases, aluminum, finely powdered metals, permanganates, sulfuric acid, hydrogen peroxide, caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), nitro compounds (organic, e.g. nitrobenzene, nitroglycerine, picric acid, trinitrotoluene).
Hazardous Decomposition Products	Carbon monoxide, carbon dioxide, hydrogen gas.
Hazardous Polymerization	Will not occur.

Section 11 - Toxicological Information

RTECS#:	CAS# 64-18-6: LQ4900000
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LD50/LC50:	RTECS: CAS# 64-18-6: Draize test, rabbit, eye: 122 mg Severe; Inhalation, mouse: LC50 = 6200 mg/m ³ /15M; Inhalation, rat: LC50 = 15 gm/m ³ /15M; Oral, mouse: LD50 = 700 mg/kg; Oral, rat: LD50 = 1100 mg/kg; Other:
Carcinogenicity:	Formic acid - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other:	See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity:	Fish: <i>Leuciscus idus</i> : LC50: 46-100 mg/l; 96H; . Daphnia: EC50: 34.2 mg/l; 48H; .
Other:	Readily biodegradable. log Pow: -0.54

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	FORMIC ACID	FORMIC ACID	FORMIC ACID
Hazard Class:	8 (3)	8 (3)	8
UN Number:	1779	1779	1779
Packing Group:	II	II	II

USA RQ: CAS# 64-18-6: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: C

Risk Phrases:

- R 35 Causes severe burns.

Safety Phrases:

- S 23 Do not inhale gas/fumes/vapour/spray.
- S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

- CAS# 64-18-6: 1

Canada

- CAS# 64-18-6 is listed on Canada's DSL List

US Federal

- TSCA
- CAS# 64-18-6 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date:	July 22, 2015
Revision #0 Date	

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