

MATERIAL SAFETY DATA SHEET

FORMIC ACID

1. CHEMICAL IDENTITY

Chemical Formic Acid (85%)Name :

Chemical Classification Carboxylic acid,
: Aliphatic

Synonyms :Methanoic acid, Formylic acid,
Hydrogen carboxylic acid.

Trade Name :

Formula : HCOOH

C.A.S. No. : 64-18-6

Regulated Identification

U.N. No. : 1779

:

Shipping Formic acid

Name :

Codes/Label :Corrosive class - 8

Hazchem Code No. : 2 R

Hazardous 80waste I.D.

No.

:

Hazardous C. A. S. No.ingredients :

% Wt

1. Formic acid 64-18-6

85-98

2. Water 7732-18-5

1-15

2. PHYSICAL AND CHEMICAL DATA

Boiling Range/point degreeC : 100.6Physical
State

: Liquid Appearance : Colourless

Melting/Freezing Point degree C : 8.3 Vapour

Odour : A Pungent Irritating mm Hg at 25.7

Pressure at 35 degree C : 23-33

odour.degree

Vapour Density : 1.6 Solubility in water
(Air = 1) Completely soluble

at 30 degree C : Others : Fuming liquid, class 3-A

Combustible liquid and
highly corrosive liquid.

Specific Gravity : 1.22 pH : Not Available

Water = 1

3. FIRE AND EXPLOSION HAZARD DATA

Flammability : LEL : 18.0 % Flash Point degree C : 52.0 (CC) Autoignition
 Flammable temperature degree C :TDG
 Flammability : UEL : 57.0 % Flash Point degree C : 57.0 (OC) 435.0NA
 Explosion Sensitivity to N.A. Explosion Sensitivity to Static Hazardous
 Impact : Electricity : Yes Combustion Products :
 Hazardous Polymerisation N.A.Irritating and toxic
 : fumes may be emmited on decomposition.
 Combustion may produce CO and CO2.
 Combustible liquid : Yes Explosive Corrosive No
 Material : No Material :
 Flammable Material : Yes Oxidiser : No Others :
 Pyrophoric Material : No Organic No
 Peroxide

4. REACTIVITY DATA

Chemical Stability Stable under normal condition of
 : use.
 Incompatibility with : Avoid contact with oxidisers, reducing agents, Sulphuric acid,
 other materialCaustic and corrosive to metals.
 Reactivity :Certain salts and mineral acid will catalyse the reaction and
 temperature will increase the rate. It will decompose slowly
 during storage. Will liberate Carbon monoxide which can
 rupture sealed containers.
 Hazardous Reaction Products N.A.

5. HEALTH HAZARDS DATA

Routes of Entry	Inhalation, Skin, Eye and Ingestion.				
Effects of Exposure/Symptoms	Effects skin, respiratory system, kidneys, liver, eyes.				
Inhalation	May cause respiratory tract irritation, burns, coughing, frothy sputum, difficulty in breathing, fatigue and pulmonary edema. May cause dyspnea, nausea, lacrymation.				
Eye contact	EXTREMELY IRRITATING AND CORROSIVE. Contact may cause conjunctivitis, redness, pain, blurred vision, conjunctival and corneal destruction and permanent injury. Exposure to vapours of fumes may cause irritation.				
Skin Contact	EXTREMELY IRRITATING AND CORROSIVE. Contact may cause redening, itching, inflammation, burns, blistering and tissue damage. May also cause brownish or yellowish stains on the skin. Skin burns may be deep and healing will be slow with scar formation. Causes dermatitis.				
Ingestion	SLIGHTLY TOXIC. CORROSIVE. May cause burning pain of the mouth, throat and abdomen and coughing. May also cause shock, breathing difficulties and kidney damage. It may also cause constriction of throat followed by nausea, abdominal spasms, vomiting, Hematemesis and diarrhoea. Chronic effects of exposure : Chronic exposure by inhalation may produce erosion of the teeth and jaw necrosis.				
Emergency Treatment	-				
TLV (ACGIH)	5.0 ppm	9.0 mg/m3	STEL : N.A		
Permissible Exposure Limit			Odour Threshold N.A.		
		mg/m3	N.A		
LD - 50 (oral - mouse)	700 mg/kg	IDLH	30 ppm		
LD - 50 (oral rat)	1.21 gm/kg				
NFPA Hazard Signals	Health 2	Flammability --	Reactivity --	Special	

6. PREVENTIVE MEASURES

Personal Use Airlines mask. Use breathing apparatus set for emergency operations / IDLH Protective conditions. Use NIOSH or MSHA approved equipment when air borne exposure

Equipment limits are exceeded. Wear chemical safety goggles and face shield. DO NOT

WEAR CONTACT LENSES WHEN WORKING WITH THIS SUBSTANCE. Wear gloves and protective clothing to prevent skin contact.

Provide safety shower at any location where eye/skin contact can occur. Gas tight chemical suit for emergency.

Handling and Storage Precautions

Store in a tightly closed containers in a cool, dry, isolated, well-ventilated area away from heat, sources of ignition and incompatibles. Do not eat, drink or smoke in areas of use or storage.

Empty container may contain toxic, flammable or explosive residuals or vapours. Do not cut, grind, drill, weld or reuse containers unless adequate precautions are taken against these hazards. Assure that proper personal protection measures are taken when opening or entering confined storage vessels.

7. EMERGENCY AND FIRST AID MEASURE

FIRE	FIRE EXTINGUISHING MEDIA	Use a water spray, dry chemical, alcohol foam, all purpose foam or carbon dioxide to extinguish fire.
FIRE	Special Procedures	Use a water spray to cool fire-exposed containers, structures and to protect personnel. If leak or spill has not ignited, ventilate area and use water spray to disperse gas or vapour and to protect personnel attempting to stop a leak. use water to dilute spills and to flush them away from sources of ignition. Do not flush down public sewers. Exposed fire fighters should wear full protective equipment. certain situations may require the use of MSHA/NIOSH approved self-contained breathing apparatus with full face piece.

EXPOSURE	Unusual Hazards	Irritating or toxic substances may be emitted upon thermal decomposition. Dangerous when exposed to heat or flame. Runoff to sewer may cause fire or explosion hazard. Containers may explode in heat or fire.
	First Aid Measures	<p>INHALATION : Remove exposed person from source of exposure. If not breathing, ensure open airway and institute cardiopulmonary resuscitation (CPR). If breathing is difficult, administer oxygen if available. Keep the personnel warm and at rest. Get immediate medical attention.</p> <p>EYE : Flush with large amount of water for 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get immediate medical attention.</p> <p>SKIN : Wash the affected area with soap and water .Remove contaminated clothing immediately. Get immediate medical attention. Discard contaminated clothing and leather goods.</p> <p>INGESTION : Do not induce vomiting. If victim is conscious, give water or milk to dilute stomach contents. Keep affected person warm and at rest. Get medical attention immediately.</p>
	Antidotes/Dosages	-
	Notes to Physician	Delayed pulmonary edema may occur, and patient should be maintained under observation for this complication. The agent is an acid corrosive and produced coagulative necrosis of the buccal cavity, esophagus and stomach. The major causes of death are circulatory shock, asphyxia due to glottic or laryngeal edema, perforation of the esophagus or stomach. While treatment of acute ingestion is controversial, induction of emesis and the use of carbon dioxide producing anti-acids are indicated. Nasal gastric intubation should be undertaken only with the risk of perforation recognized in contrast to the value of gastric aspiration and lavage. Late complications may include esophageal, gastric or pyloric stenosis.
SPILLS		Steps to be taken
		Keep unnecessary people away. Stay upwind.
		Keep out of low areas. Isolate hazard areas and deny entry. Do not touch spilled

material. Stop leakage if you can do it without any risk. Flush the area with plenty of water. Use SCBA and gas tight chemical protection suit. Take up with sand or with incompatible absorbent.\ materials or other absorbent known to be compatible and then flush the area with water. In case of large spill, dyke far ahead of spill for later disposal. Knock down the vapours with water spray.

Waste disposal Method This substance, when discarded or disposed of, is a hazardous waste. The transportation, storage, treatment, and disposal of this waste material must be conducted in compliance with all applicable government regulations. Disposal can occur only in properly permitted facilities. Treat contaminated water used for spill/leak control or used for dilution or for fire fighting.

8. ADDITIONAL INFORMATION / REFERENCES :

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