

FORMIC ACID

0485

September 1997

CAS No: 64-18-6
 RTECS No: LQ4900000
 UN No: 1779
 EC No: 607-001-00-0

Hydrogen carboxylic acid
 Methanoic acid
 Aminic acid
 Formylic acid
 HCOOH
 Molecular mass: 46

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Powder, alcohol-resistant foam, water spray, carbon dioxide.
EXPLOSION	Above 69/C explosive vapour/air mixtures may be formed.	Above 69/C use a closed system, ventilation.	In case of fire: keep drums, etc., cool by spraying with water.

EXPOSURE		AVOID ALL CONTACT!	
Inhalation	Sore throat. Cough. Burning sensation. Shortness of breath. Laboured breathing. Unconsciousness. Symptoms may be delayed (see Notes).	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Refer for medical attention.
Skin	MAY BE ABSORBED! Pain. Blisters. Serious skin burns.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
Eyes	Pain. Redness. Severe deep burns. Blurred vision.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Ingestion	Sore throat. Burning sensation. Abdominal pain. Abdominal cramps. Vomiting. Diarrhoea.	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Collect leaking liquid in sealable containers. Cautiously neutralize spilled liquid with weak alkaline solution (e.g., disodium carbonate). Then wash away with plenty of water. Do NOT let this chemical enter the environment. (Extra personal protection: complete protective clothing including self-contained breathing apparatus).	<p>EU classification C Symbol R: 35 S: (1/2-)23-26-45 Note: B</p> <p>UN classification UN Hazard Class: 8 UN Pack Group: II</p> <p>Do not transport with food and feedstuffs.</p>

EMERGENCY RESPONSE	SAFE STORAGE
Transport Emergency Card: TEC (R)-89 NFPA Code: H3; F2; R0	Separated from strong oxidants, strong bases, strong acids, and food and feedstuffs. Well closed. Keep in a well-ventilated room.

IMPORTANT DATA

Physical State; Appearance

COLOURLESS, FUMING LIQUID, WITH PUNGENT ODOUR.

Chemical dangers

The substance decomposes on heating and on contact with strong acids (sulfuric acid) producing carbon monoxide. The substance is a medium strong acid. Reacts violently with oxidants. Reacts violently with strong bases causing fire and explosion hazard. Attacks many plastics and metals.

Occupational exposure limits

TLV: 5 ppm, 9.4 mg/m³ as TWA; 10 ppm, 19 mg/m³ as STEL (ACGIH 1996).

EU OEL: 5 ppm, 9 mg/m³ as TWA (EU 2006).

Routes of exposure

The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

Inhalation risk

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20/C.

Effects of short-term exposure

The substance is very corrosive to the eyes, the skin and the respiratory tract. Corrosive on ingestion. Inhalation of the vapour may cause lung oedema (see Notes). The substance may cause effects on the energy metabolism, resulting in acidosis.

PHYSICAL PROPERTIES

Boiling point: 101/C

Melting point: 8/C

Relative density (water = 1): 1.2

Solubility in water: miscible

Vapour pressure, kPa at 20/C: 4.6

Relative vapour density (air = 1): 1.6

Relative density of the vapour/air-mixture at 20/C (air = 1): 1.03

Flash point: 69/C

Auto-ignition temperature: 520/C

Explosive limits, vol% in air: 18-51

Octanol/water partition coefficient as log Pow: -0.54

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms.

NOTES

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.

Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered.

The odour warning when the exposure limit value is exceeded is insufficient.

Card has been partially updated in January 2008: see Occupational Exposure Limits.

ADDITIONAL INFORMATION

LEGAL NOTICE

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible for the use which might be made of this information