



Carolina International Sales Co., Inc

MATERIAL SAFETY DATA SHEET

2522 Plantation Center Drive
Matthews, NC 28105
(704) 845 9440

www.ciscochem.com

1. PRODUCT NAME: Formic Acid

2. CHEMICAL NAME: Formic Acid

3. SYNONYMS:

4. CAS NUMBER: 64-18-6

5. COMPOSITION: Formic Acid 90-100%

6. PROPERTIES: ODOR & APPEARANCE: clear, colorless, fuming liquid with intense, pungent, pungent, penetrating odor
ODOR THRESHOLD: 13ppm – 340ppm – wide range, suggesting unreliable data VAPOUR PRES-SURE: 33.5mmHg/4.5kPa (20 c)
EVAPORATION RATE (butyl Acetate=1): 2.1
VAPOR DENSITY (air=1): 1.6
BOILING RANGE: 100.8 c (100%), 105 c (90%)
FREEZING POINT: 8.4 c (100%), approx -6 c (90%)
SPECIFIC GRAVITY: 1.22 (100%), 1.20 (90%) (20/20 c)
WATER SOLUBILITY: complete
IN OTHER SOLVENTS: soluble in acetone, methanol, ethanol, diethyl ether, glycerol, ethyl acetate
VISCOSITY: 1.8 centipoise (20 c)
PH: 2.4 (0.1M sol'n)

7. HAZARDS: MATERIAL USE: silage additive, leather tanning

8. FIRE FIGHTING INFORMATION: FLASH POINT: 46 c (100%), 58 c (90%) - (closed cup)
AUTOIGNITION TEMPERATURE: 480 c (100%), 434 c (90%)
FLAMMABLE LIMITS: 12% - 30% (100%), 18% - 57% (90%)
COMBUSTION PRODUCTS: carbon monoxide and water below 150 c; above 150 c, hydrogen gas also forms
FIREFIGHTING PRECAUTIONS: foam, dry chemical, water fog, water spray only to cool & dilute, product floats on water – water jet spreads flames; firefighters must wear SCBA
STATIC DISCHARGE: will not accumulate a static charge
MECHANICAL IMPACT: not sensitive
CHEMICAL STABILITY: stable; will not polymerize
REACTIVE WITH: strong oxidizing agents; alkalies, reacts vigorously with powdered metals producing hydrogen gas, reacts vigorously with aluminium, corrodes most metals; nickel or palladium/carbon catalyses rapid decomposition to hydrogen gas
DECOMPOSITION PRODUCTS: slowly decomposes to carbon monoxide – decomposes more rapidly when warm

9. PERSONAL PROTECTION MEASURES: HANDS: butyl rubber or neoprene rubber gloves – other materials also suitable; check with supplier
EYES: safety glasses with side shields or chemical goggles
RESPIRATOR: not required if ventilation is adequate, or use organic vapor cartridge
CLOTHING: impermeable (hands, above) boots, apron, and long sleeves if splashing is anticipated

10. FIRST AID PROCEDURES: SKIN: Wash with soap and plenty of water. Remove contaminated clothing and do not reuse until thoroughly cleaned or laundered.
EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.

IN CASE OF
TRANSPORT EMERGENCY
CONTACT CHEMTREC
USA: 1-800-424-9300
INTERNATIONAL: 1-703-527-3887



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INHALATION: Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! If breathing stops, administer artificial respiration and seek medical aid promptly.
INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.
NOTE: Inadvertent inhalation of vomited material may seriously damage the lungs. The risk and danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity product. The stomach should only be emptied under medical supervision, after the installation of an airway to protect the lungs.

11. EXPOSURE TWAEV ppm: 5
LIMITS: LD50 ORAL: 700
SKIN (mg/kg): not known
LC50ppm INHALATION: 825

12. TOXICOLOGICAL EFFECTS ACUTE EXPOSURE
INFORMATION: SKIN CONTACT: dangerous corrosive to skin
SKIN ABSORPTION: probably not; - skin damage too severe to allow absorption
EYE CONTACT: severely irritating, corrosive, likely to damage eyes
INHALATION: severely irritating; may cause choking, coughing, difficult breathing
INGESTION: severely irritating & corrosive to digestive tract; burning sensation in mouth, vomiting of dark blood may occur; may cause asphyxia from oedema of larynx
EFFECTS OF CHRONIC EXPOSURE
GENERAL: may cause blood or albumin in urine
SENSITISING: not a sensitizer
REPRODUCTIVE EFFECT: probably not a mutagen, no known effect on humans
SYNERGISTIC WITH: not known
ESTIMATED LD50: 700mg/kg (oral, mouse), 1100mg/kg (oral, rat), 4000mg/kg (oral, dog)
ESTIMATED LC50: 825ppm (inhalation, mouse), 2000ppm (rat), 3300PPM (MOUSE)

13. ECOLOGICAL This product cannot accumulate in living tissue; this product is readily and rapidly biodegradable in the presence of oxygen.
INFORMATION:

14. DISPOSAL DO NOT FLUSH TO SEWER; may be incinerated in approved facility.
CONSIDERATIONS:

15. CARCINOGENIC Not a tumorigen, not a carcinogen.
PROPERTIES &
NOTIFICATIONS:

16. TRANSPORT USA 49 CFR
INFORMATION: Product identification number: UN – 1779
Shipping name: formic acid
Classification: Class 8 (9.2); Packing Group II
WHMIS Class: B3, E

17. HANDLING & STORAGE: Store and use a cool dry environment, away from sources of ignition, heat and oxidizing agents. Pure (100%) formic acid tends to decompose into carbon monoxide. The pressure of gas accumulating within a drum can rupture the drum. Formic acid diluted to 95% or 90% is more stable. When diluting, always add the acid to the water. Use with adequate mechanical exhaust ventilation. All people working in the vicinity of this product should carry escape respirators with acid gas filter cartridge. Do not cut, drill, weld



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or grind on or near this container. Avoid contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace.

18. ACCIDENTAL LEAK PRECAUTION: dyke to control spillage and prevent environmental contamination.
RELEASE HANDLING SPILL: ventilate contaminated area; recover free liquid with explosion-proof pumps; absorb residue on an inert sorbent, pick up using non-sparking plastic shovel, & store in closed containers for disposal.
19. REGULATORY INFORMATION: