

Safety Data Sheet

Formic Acid, Concentrated

Section 1 - Chemical Product and Company Identification

SDS Name: Formic Acid, Concentrated

Catalog Numbers: SO-235

Company Identification: Transene Company, Inc., DBA ROWLEY BIOCHEMICAL Inc.
10 ELECTRONICS AVENUE
DANVERS, MA 01923

For information, call: 978-739-4883

Emergency Number: 800-424-9300

For CHEMTREC assistance, call: 800-424-9300

Section 2 - Hazards Identification

GHS Classifications

H226-Flammable liquids: 3

H290-Corrosive to metals: 1

H302-Acute toxicity, oral: 4

H314-Skin corrosion/irritation: 1A

H318-Serious eye damage/eye irritation: 1

H331-Acute toxicity, inhalation: 3

Consists of unknown acute dermal toxicity.

Pictograms or Hazard Symbols and Hazard Statement(s):



Signal Word: Danger

Hazard Statements:

H226-Flammable liquid and vapour

H290-May be corrosive to metals

H302-Harmful if swallowed

H314-Causes severe skin burns and eye damage
H318-Causes serious eye damage
H331-Toxic if inhaled

Precautionary Statements:

P210-Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
P233-Keep container tightly closed.
P234-Keep only in original packaging.
P240-Ground and bond container and receiving equipment.
P241-Use explosion-proof electrical/ventilating/lighting equipment.
P242-Use non-sparking tools.
P243-Take action to prevent static discharges.
P260-Do not breathe dust/fume/gas/mist/vapours/spray.
P261-Avoid breathing dust/fume/gas/mist/vapours/spray.
P264-Wash thoroughly after handling.
P270-Do not eat, drink, or smoke when using this product.
P271-Use only outdoors or in a well-ventilated area.
P280-Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312-If swallowed: Call a Poison Center/doctor if you feel unwell.
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/shower.
P304+P340-If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338-If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310-Immediately call a Poison Center/doctor.
P311-Call a Poison Center/doctor.
P330-Rinse mouth.
P363-Wash contaminated clothing before reuse.
P370+P378-In case of fire: Use dry chemical, carbon dioxide, dry sand, water spray, or alcohol-resistant foam to extinguish.
P390-Absorb spillage to prevent material damage.
P403+P233-Store in a well-ventilated place. Keep container tightly closed.
P403+P235-Store in a well-ventilated place. Keep cool.
P405-Store locked up.
P406-Store in a corrosion resistant container with a resistant inner liner.
P501-Dispose of contents/container in accordance with all local/regional/national/international regulations.

Section 3 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent
64-18-6	Formic Acid	>88

Section 4 - First Aid Measures

Eye Exposure: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Get immediate medical attention.

Dermal Exposure: In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Get immediate medical attention.

Oral Exposure: If swallowed, clean mouth with water and get immediate medical advice. Do NOT induce vomiting.

Inhalation Exposure: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get immediate medical attention.

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. During a fire, irritating gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use dry chemical, carbon dioxide, dry sand, or alcohol-resistant foam. Do not put water on leaked material. Do not use water to extinguish.

Hazardous Combustion Products: Carbon oxides, hydrogen, irritating and toxic fumes and gases.

Flash Point: 49.5 °C (121.1 °F) Closed Cup

Autoignition Temperature: 520 °C (968 °F)

Explosion Limits, Lower: 18%

Upper: 38%

NFPA Rating: (estimated) Health: 3; Flammability: 2; Instability: 1

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s):

Wear personal protective equipment. Do not ingest or inhale. Do not get on skin or clothing. Do not get in eyes. Ensure adequate ventilation. Do not breathe mist/vapors/spray. Use spark-proof tools and explosion-proof equipment. Take precautionary measures to prevent static discharge.

Methods for Cleaning up: Absorb with sand, earth, or vermiculite. Carefully sweep up and containerize for proper disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Do not release to the environment. Do not release to drains.

Section 7 - Handling and Storage

Use care when handling. Wear personal protective equipment. Wash thoroughly after handling. Ensure adequate ventilation. Use only under a chemical fume hood. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Do not breathe mist/vapors/spray. Keep in a tightly closed and non-metal container. Store in a cool, dry, and well-ventilated area. Take precautionary measures to avoid static discharges. Use non-sparking tools and explosion-proof equipment. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. Keep away from incompatible materials.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

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 chemical-resistant protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Exposure Limits:

Chemical Name	ACGIH - TLV	NIOSH - IDLH	OSHA - Final PELs
Formic Acid CAS#64-18-6	5 ppm TWA 10 ppm STEL	5 ppm TWA 9 mg/m ³ TWA 30 ppm IDLH	5 ppm TWA 9 mg/m ³ TWA

OSHA Vacated PELs: Formic Acid: 5 ppm TWA; 9 mg/m³ TWA

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: Clear, colorless

Odor: Pungent

Vapor Pressure: 44 mbar at 20 °C (68 °F)

Odor Threshold: Not available

Vapor Density: 1.59 (air = 1.0)

pH: 2.1 (10g/L aqueous solution)

Relative Density: 1.22 at 20 °C (68 °F)

Melting point/freezing point: 8 °C (46.4 °F)

Solubility: Miscible in water
Boiling Point: 101°C (213.8°F) at 760 mmHg
Flash Point: 49.5°C (121.1°F) Closed Cup
Evaporation Rate: Not available
Flammability (solid, gas): Not available
Partition coefficient: n-octanol/water: Not available
Autoignition Temperature: 520°C (968°F)
Decomposition Temperature: Not available
Viscosity: 1.47 mPa.s at 20°C (68°F)
Specific Gravity/Density: 1.220

Section 10 - Stability and Reactivity

Chemical Stability: Stable in closed containers under normal storage conditions.
Conditions to Avoid: Incompatible materials, ignition sources, and excess heat. Exposure to moist air or water.
Incompatibilities with other materials: Strong oxidizing agents, strong bases, metals, and finely powdered metals.
Hazardous Decomposition Products: Carbon oxides, hydrogen, irritating and toxic fumes and gases.

Section 11 - Toxicological Information

CAS#64-18-6 Formic Acid: RTECS#: LQ4900000

LD50 Oral: 730 mg/kg (rat)

LD50 Dermal: Not available

LC50 Inhalation: 15 g/m³ 15min (rat); 7.85 mg/L 4h vapor (rat)

Carcinogenicity: Formic Acid CAS#64-18-6 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

Information on the likely routes of exposure: Routes of entry anticipated: oral, dermal, inhalation, and eye.

Epidemiology: Not available.

Teratogenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects: Not available.

Neurotoxicity: Not available.

Mutagenicity: Not available.

Specific Target Organ Toxicity, Single Exposure: Respiratory system.

Specific Target Organ Toxicity, Repeated Exposure: Not available.

Symptoms associated with exposure: Symptoms of overexposure may include headache, dizziness, tiredness, shortness of breath, nausea, vomiting, cough, wheezing, and burning sensation. Corrosive material. Extremely destructive to the tissue of the mucous membranes, upper respiratory tract, eyes, and skin. Ingestion may cause severe swelling, severe damage to the delicate tissue, and danger of perforation. Causes severe skin burns and eye damage. May cause kidney irregularities.

The toxicological properties of this material have not been thoroughly investigated.

Section 12 - Ecological Information

Ecotoxicity: Do not release to the environment. Do not release to drains.

CAS#64-18-6 Formic Acid:

LC50, freshwater fish: 46-100 mg/L 96h (leuciscus idus)(golden orfe)

EC50, freshwater algae: 25 mg/L 96h

EC50, water flea: 34 mg/L 48h

Persistence and degradability: Persistence is unlikely based on available information.

Bio-accumulative potential: Bioaccumulation is unlikely based on available information.

Mobility: Will likely be mobile in the environment due to its water solubility.

Section 13 - Disposal Considerations

DISPOSAL: Dispose of in accordance with all federal, state, and local regulations.

Section 14 - Transport Information

DOT

Proper shipping name: Formic Acid

UN1779

PG II

Hazard Class 8 (3)

Section 15 - Regulatory Information

Canada Regulatory Information

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the SDS contains all the information required by the CPR.

Section 16 - Additional Information

SDS Creation Date: 2-27-23

Revision #1: 9-18-24

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