

SAFETY DATA SHEET

Formic Acid 88%

This MSDS is valid for all grades that start with catalog number 283

1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND OF SUPPLIER

Product Identifier: High Purity Chemicals
Synonyms: Hydrogen carboxylic acid; Methanoic acid; Aminic acid; Formylic acid
Other means of identification: CAS No. 64-18-6
EINECS No. 200-579-1

Recommended use of the chemical and restrictions on use:
Commonly used as a preservative.

Supplier Details:

Pharmco Products, Inc.
1101 Isaac Shelby Drive, Shelbyville,
KY 40065, USA.
Tel: 502.232.7600
Fax: 502.633.6100
CCN17213

Pharmco Products, Inc.
58 Vale Road, Brookfield,
CT 06804, USA.
Tel: 203.740.3471
Fax: 203.740.3481
CCN17213



Emergency Contact: CHEMTREC: 1.800.424.9300 (USA) / +1.703.527.3887 (International)

2. HAZARDS IDENTIFICATION

OSHA Hazards:

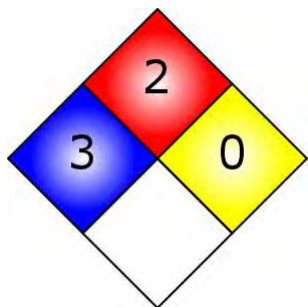
Combustible liquid, target organ effect, corrosive, Harmful by ingestion

Target Organs:

Blood, Central nervous system, Kidney, Liver

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NFPA



GHS label elements, including precautionary statements



Signal Word:

DANGER!

Hazard statement(s)

H226	Flammable liquid and vapor
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H331	Toxic if inhaled
H402	Harmful to aquatic life.

Precautionary statement(s)

P261	Avoid breathing dust/fumes/gas/mist/vapors.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.
P310	Immediately call a POISON CENTER or doctor/ physician.
P280	Wear protective gloves and eye and face protection.

GHS Classification(s)

Acute aquatic toxicity (Category 3)
Acute Toxicity, Inhalation (Category 3)
Acute toxicity, Oral (Category 4)
Eye damage (Category 1)
Flammable Liquids (Category 3)
Skin corrosion (Category 1B)

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Other hazards which do not result in classification:

Potential Health Effects:

Organ	Description
Eyes	Causes severe eye burns and eye damage
Ingestion	Harmful if ingested
Inhalation	Can be harmful if inhaled. Material is corrosive to mucous membranes and the upper respiratory tract.
Skin	Material is harmful, causing skin burns, if absorbed through the skin.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical identity:	Formic Acid
Common name / Synonym:	Hydrogen carboxylic acid; Methanoic acid; Aminic acid; Formylic acid
CAS number:	64-18-6
EINECS number:	200-579-1
ICSC number:	0485
RTECS #:	LQ4900000
UN #:	1779
EC #:	607-001-00-0

% Weight	Material	CAS
88	Formic Acid	64-18-6

4. FIRST AID MEASURES

General advice

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Skin

Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing/shoes.

Inhalation

Remove person to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.

Eyes

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Keep rinsing while in transport to hospital.

Ingestion

DO NOT induce vomiting. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with

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water. Seek medical attention. Never give anything by mouth to an unconscious individual.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

SMALL FIRE: Use dry chemicals, CO₂, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam. Cool all affected containers with flooding quantities of water.

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

Carbon oxides expected to be the primary hazardous combustion product.

Special protective equipment and precautions for firefighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Keep unopened containers cool by spraying with water.

Flammable Properties

Classification

OSHA/NFPA Class IIIA Combustible Liquid.

Flash point

50 °C (122 °F) - closed cup

Autoignition temperature

434 °C (813°F)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Wear respiratory protection. Do not inhale vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations.

Vapors can accumulate in low areas.

Environmental precautions:

Stop leak. Contain spill if possible and safe to do so. Prevent product from entering drains.

Methods and materials for containment and cleaning up:

Contain spill, then collect with an electrically protected vacuum cleaner or by wet-brushing and put the material into a convenient waste disposal container. Keep container closed.

7. HANDLING AND STORAGE

Precautions for safe handling:

Do not get on skin or in eyes. Do not inhale vapor or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

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Conditions for safe storage, including any incompatibilities:

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters, e.g., occupational exposure limit values or biological limit values:

Occupational Exposure Limits

Component	Source	Type	Value	Note
Formic Acid	US (OSHA)	TWA	5 ppm, 9 mg/m ³	29 CFR 1910.1000 Table Z-1 Limits for Air Contaminants
Formic Acid	US (ACGIH)	STEL	10 ppm	ACGIH Threshold Limit Value

Appropriate engineering controls:

General room or local exhaust ventilation is usually required to meet exposure limit(s). Electrical equipment should be grounded and conform to applicable electrical code.

Individual protection measures, such as personal protective equipment:

Respiratory protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Skin and body protection:

Wear impervious, flame retardant, antistatic protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance (<i>physical state, color, etc.</i>)	Liquid. Colorless, clear.
Odor	Specific data not available
Odor threshold	Specific data not available
pH	~ 2.2
Freezing point	8.2 - 8.4 °C (46.8 - 47.1 °F)
Initial boiling point and boiling range	101 °C (213 °F)
Flash point	50 °C (122 °F)
Evaporation rate	Specific data not available
Flammability (solid, gas)	Combustible Liquid
Upper / Lower flammability or explosive limits	57% (V) / 18% (V)
Vapor pressure	29.3 hPa (22 mmHg) at 20 °C (68 °F)
Vapor Density	Specific data not available
Relative Density	1.2 g/mL at 25 °C (77 °F)
Solubility(ies)	completely miscible
Partition coefficient n-octanol/water(ies)	log Pow: -0.54
Auto-ignition temperature	434 °C (813 °F)
Decomposition temperature	Specific data not available
Formula (FORMIC ACID)	CH ₂ O ₂
Molecular Weight (FORMIC ACID)	46.0 g/mol

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	No data available
Conditions to avoid (e.g., static discharge, shock or vibration)	Heat, flames, and sparks.
Incompatible materials	Strong oxidizing agents, Strong bases, Powdered metals
Hazardous decomposition products	Carbon oxides are expected to be, under fire conditions, the primary hazardous decomposition products.

11. TOXICOLOGICAL INFORMATION

- Formic Acid 64-18-6

Product Summary:

No data available for the mutagenic, teratogenic, or reproductive effects of the product. No data available to designate product as an aspiration hazard or to cause specific target organ toxicity through single or repeated exposure.

Acute Toxicity:

LC50 (Inhalation)	Rat	7.4 mg/L	4 hours
LD50 (Oral)	Rat	1,100 mg/kg	

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Irritation:

Eyes

Rabbit - severe eye irritation/damage - 6 hours

Respiratory/Skin sensitization

Prolonged/repeated exposure may cause allergic reactions in certain sensitive individuals.

Skin

Rabbit - severe skin irritation

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Other Hazards

Organ	Description
Eyes	Causes eye damage and eye burns.
Ingestion	Harmful if ingested.
Inhalation	Harmful through inhalation. Material is corrosive to mucous membranes and the upper respiratory tract.
Skin	Causes skin burns or skin damage.

12. ECOLOGICAL INFORMATION

- Formic Acid 64-18-6

Ecotoxicity (aquatic and terrestrial, where available):

Acute Fish Toxicity (FORMIC ACID)

LC50 / 96 hours Golden Orfe - 46-100 mg/L

Toxicity to Daphnia (FORMIC ACID)

EC50 / 48 hours Water flea - 34 mg/L

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Persistence and degradability:
Readily biodegradable.

Bioaccumulative potential:
Biaccumulation is unlikely

Other adverse effects:
Can be considered an environmental hazard through improper handling or improper disposal.

13. DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

14. TRANSPORT INFORMATION

Description of waste residues and information on their safe handling and methods of disposal:

UN number	1779
UN proper shipping name	Formic Acid
Transport hazard class(es)	8 (3)
Packing group (if applicable)	II

Reportable Quantity

5,000 lbs

IMDG

UN-Number: 1779 Class: 8 (3) Packing Group: II

EMS-No: F-E, S-C

Proper shipping name: FORMIC ACID

Marine pollutant: No

IATA

UN-Number: 1779 Class: 8 (3) Packing Group: II

Proper shipping name: Formic Acid

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question:

OSHA Hazards

Combustible liquid, target organ effect, corrosive, Harmful by ingestion

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All ingredients are on the following inventories or are exempted from listing

Country	Notification
Australia	AICS
Canada	DSL
China	IECS
European Union	EINECS
Japan	ENCS/ISHL
Korea	ECL
New Zealand	NZIoC
Philippines	PICCS
United States of America	TSCA

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313: FORMIC ACID
CAS-No. 64-18-6 Revision Date 2007-07-01

SARA 311/312 Hazards

- Acute Health Hazard
- Chronic Health Hazard
- Fire Hazard

CERCLA

Formic Acid CAS-No. 64-18-6, RQ: 5,000 lbs

Massachusetts Right To Know Components

Formic acid CAS-No. 64-18-6 Revision Date 2007-07-01

Pennsylvania Right To Know Components

Formic acid CAS-No. 64-18-6 Revision Date 2007-07-01

Water CAS-No. 7732-18-5

New Jersey Right To Know Components

Formic acid CAS-No. 64-18-6 Revision Date 2007-07-01

Water CAS-No. 7732-18-5

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California Prop 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**16. OTHER INFORMATION:
INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS**

Disclaimer

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