SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Formic acid
CAS number	64-18-6
Synonyms	Methanoic acid

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Laboratory chemicals.

1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable Liquids	Category 3
Acute Oral Toxicity	Category 4
Skin Corrosion/Irritation	Category 1A
Serious Eye Damage/Eye Irritation	Category 1

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word: Danger

Hazard statements:
Flammable liquid and vapor.
Harmful if swallowed.
Causes severe skin burns and eye damage.
Toxic if inhaled.

Precautionary statements:

Prevention: Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink, or smoke when using this product. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep cool. Wear respiratory protection.

Response: Immediately call a POISON CENTER or doctor/physician.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Fire: In case of fire, use CO2, dry chemical, or foam for extinction.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Corrosive to the respiratory tract.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Water	Aqua; H2O	7732-18-5	10-12%
Formic acid	Methanoic acid	64-18-6	88-90%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove to fresh air. Immediate medical attention is required. If not breathing, give artificial respiration.

In case of skin contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

In case of eye contact Rinse immediately with plenty of water and seek medical advice.

If swallowed Do NOT induce vomiting. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Difficulty in breathing. Causes burns by all exposure routes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea, and vomiting. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue, and danger of perforation.

4.3 Indication of any immediate medical attention and special treatment needed

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media Water spray, Carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist maybe used to cool closed containers.

Unsuitable extinguishing media No information available.

5.2 Specific hazards arising from the substance or mixture

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Strong reducing agent. Fire and explosion risk in contact with oxidizing agents. Thermal decomposition can lead to release of irritating gases and vapors.
Hazardous Combustion Products: Carbon monoxide (CO). Carbon dioxide (CO2). Hydrogen.

5.3 Special protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

5.4 Further information

Flash Point 50 °C / 120 °F

Autoignition Temperature 434°C / 813.2°F

Explosion limits

Upper 57 vol %
Lower 18 vol %

Sensitivity to Mechanical Impact No information available.
Sensitivity to Static Discharge No information available.

NFPA

Health	Flammability	Instability	Physical hazards
3	2	1	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

6.2 Environmental precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4 Reference to other sections

See Section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces, and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep containers tightly closed in a dry, cool, and well-ventilated place. Keep away from heat, sparks, and flame. Containers should be vented periodically in order to overcome pressure buildup. Store in explosion-proof refrigerator. Flammables area.

Incompatibilities

Strong oxidizing agents. Metals. Finely powdered metals. Strong bases.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Component	Type	Value	
Formic acid	(Vacated) TWA	5 ppm	9 mg/m3
	TWA	5 ppm	9 mg/m3

US. ACGIH Threshold Limit Values

Component	Type	Value
Formic acid	TWA	5 ppm
	STEL	10 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value	
Formic acid	IDLH	30 ppm	
	TWA	5 ppm	9 mg/m3

Biological occupational exposure limits
No information available.

8.2 Exposure controls

Appropriate engineering controls
Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection
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. Tight sealing safety goggles. Face protection shield.

Skin protection
Chemical resistant apron. Boots. Chemical protection suit (EN 14605).

Body Protection
Chemical resistant apron. Boots. Chemical protection suit (EN 14605).

Respiratory protection
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Control of environmental exposure
No information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	Pungent
Odor Threshold	No information available
pH	2.1 (10 g/L aq.sol)
Melting Point/Range	8 °C / 46.4 °F
Boiling Point/Range	101 °C / 213.8 °F @ 760 mmHg

Evaporation Rate	No information available
Flammability (solid)	Not applicable
Flammability or explosive limit	
Upper	57 vol %
Lower	18 vol %
Vapor Pressure	22mmHg 68°F
Vapor Density	No information available
Density	No information available
Solubility	Miscible
Partition coefficient; n-octanol/water	No data available
Autoignition Temp	813.2 °F (434 °C)
Decomposition Temp	No information available
Viscosity	No information available
Molecular Formula	C H2 O2
Molecular Weight	46.02 g/mol
VOC Content(%)	No information available
Oxidizing properties	Not oxidizing

9.2 Other safety information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

No information available.

10.2 Chemical stability

Strong reducing agent. Fire and explosion risk in contact with oxidizing agents. Hygroscopic. Heat sensitive. Decomposes to water and Carbon dioxide.

10.3 Possibility of hazardous reactions

None under normal processing.

10.4 Conditions to avoid

Incompatible products. Excess heat. Keep away from open flames, hot surfaces, and sources of ignition. Exposure to moist air or water.

10.5 Incompatible materials

Strong oxidizing agents, Metals, Finely powdered metals, Strong bases.

10.6 Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO2), Hydrogen.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Formic acid	730 mg/kg (Rat)	-	15 g/m3 (Rat) 15 min

Skin corrosion/irritation

Causes severe burns by all exposure routes.

Serious eye damage/eye irritation

Causes severe burns by all exposure routes.

Respiratory or skin sensitization

Irritating to respiratory system.

Germ cell mutagenicity

No information available.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Formic acid	64-18-6	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure

None known.

Specific target organ toxicity - repeated exposure

None known.

Reproductive toxicity

No information available.

Chronic effects

Symptoms of overexposure may be headache, dizziness, tiredness, nausea, and vomiting. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue, and danger of perforation.

11.2 Additional Information

The toxicological properties have not been fully investigated.

SECTION 12: Ecological information

12.1 Toxicity

Harmful to aquatic organisms.

Product		Species	Test Results
Formic acid	EC50	Freshwater Algae	25 mg/L/96h
	LC50	Leuciscus idus	46-100 mg/L/96h
	EC50	Mictrotox	46.7 mg/L/17h
	EC50	Water Flea	34 mg/L/48h

12.2 Persistence and degradability

Miscible with water. Persistence is unlikely based on information available.

12.3 Bio accumulative potential

No information available.

12.4 Mobility in soil

Will likely be mobile in the environment due to its water solubility (log Pow = -0.54).

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Endocrine disrupting properties

Formic acid is listed on the EU - Endocrine Disrupters Candidate List.

12.7 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Formic acid - 64-18-6	U123	-

SECTION 14: Transport information

DOT (US)

UN-no UN1779

Proper Shipping Name	FORMIC ACID
Hazard Class	8
Subsidiary Hazard Class	3
Packing Group	II

IMDG

UN-no	UN1779
Proper Shipping Name	FORMIC ACID
Hazard Class	8
Subsidiary Hazard Class	3
Packing Group	II

IATA

UN-no	UN1779
Proper Shipping Name	FORMIC ACID
Hazard Class	8
Subsidiary Hazard Class	3
Packing Group	II

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not applicable.

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed, Formic acid (CAS #64-18-6), RQ: 5000 lb.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

See Section 2 for more information.

SARA 313 (TRI reporting)

Listed, Formic acid (CAS #64-18-6).

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) - Hazardous Substances

Listed, Formic acid (CAS #64-18-6), RQ: 5000 lb.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Listed, Formic acid (CAS #64-18-6).

US state regulations

US. Massachusetts RTK - Substance List

Listed, Formic acid (CAS #64-18-6).

US. New Jersey Worker and Community Right-to-Know Act

Listed, Formic acid (CAS #64-18-6).

US. Pennsylvania Worker and Community Right-to-Know Law

Listed, Formic acid (CAS #64-18-6).

California Proposition 65

Not listed.

SECTION 16: Other information

Issue date: 06/03/2026

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SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.