

Shanghai Aladdin Biochemical Technology Co., Ltd.  
No. 809, Chuhua Branch Road, Fengxian District, Shanghai

# SAFETY DATA SHEET

Version: v1  
Revision Date: 2024-01-10  
Print Date: 2024-01-17

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

### 1.1 Product identifiers

Product name : Formic acid 98-100%  
Product Number : F433212  
Brand : aladdin  
CAS-No. : 64-18-6

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

Identified uses : Laboratory chemicals, Manufacture of substances.

### 1.3 Details of the supplier of the safety data sheet

Company : Shanghai Aladdin Biochemical Tech Co., Ltd  
Address : 36 Xinjinqiao Road, Shanghai  
Telephone : 400-620-6333  
Fax : no data available

### 1.4 Emergency telephone number

Emergency Phone : 0532-83889090

## 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), H226

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 3), H331

Skin corrosion (Sub-category 1A), H314

Serious eye damage (Category 1), H318

### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

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H226	Flammable liquid and vapor
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H331	Toxic if inhaled
Precautionary statement(s)	
P210	Keep away from heat, hot surface, sparks, open flames and other ignition sources. - No smoking.
P233	Keep container tightly closed.
P235	Keep cool.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting/.../] equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash hands [and ...] 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.
P310	Immediately call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
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 [or 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.
P370+P378	In case of fire: Use ... to extinguish.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P501	Dispose of contents/container to an approved waste disposal plant.
P301+P312+P330	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

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

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms	: Methanoic acid, Formylic acid, Formic acid
Formula	: CH <sub>2</sub> O <sub>2</sub>
Molecular weight	: 46.03
CAS No.	: 64-18-6

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EC-NO. : 200-579-1

Component	Classification	Concentration
Formic acid 98-100%	no data available	98-100%, Pharmaceutical grade

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General advice

First aider needs to protect himself. Show this material safety data sheet to the doctor in attendance.

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

In case of skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

In case of eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

If swallowed

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

no data available

### 4.3 Indication of any immediate medical attention and special treatment needed

no data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

Use dry chemical, carbon dioxide or alcohol-resistant foam.

Unsuitable extinguishing media

no data available

### 5.2 Special hazards arising from the substance or mixture

Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air at elevated temperatures. Development of hazardous combustion gases or vapours possible in the event of fire.

### 5.3 Advice for firefighters

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Wear self-contained breathing apparatus for firefighting if necessary.

#### 5.4 Further information

Use water spray to cool unopened containers.

### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

#### 6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

#### 6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

#### 6.4 Reference to other sections

For disposal see section 13.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

#### 7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, ventilated warehouse. Sensitive to humidity, store at 2-8°C, filled with argon.

#### 7.3 Specific end use(s)

no data available

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

Ingredients with workplace control parameters

Component	CAS	Value	Control parameters	Basis

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Formic acid	64-18-6	PC-TWA	10 mg/m <sup>3</sup>	Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents
		PC-STEL	20 mg/m <sup>3</sup>	Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents.

**8.2 Exposure controls**

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin 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. The selected protective gloves have to satisfy the specifications of Regulation (EU)2016/425 and the standard EN 374 derived from it.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) 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).

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Control of environmental exposure  
Do not let product enter drains.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a) Appearance	form: liquid color: Transparent colorless fuming
b) Odour	no data available
c) Odour Threshold	no data available
d) pH	no data available
e) Melting point/freezing point	8.2-8.4°C
f) Initial boiling point and boiling range	100-101°C
g) Flash point	50°C
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	1.22g/mL at 25°C (lit.)
n) Water solubility	Miscible in water, ether, acetone, ethyl acetate, glycerol, methanol and ethanol. Partially miscible in benzene, toluene and xylene.
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties N	no data available
t) Oxidizing properties N	no data available

### 9.2 Other safety information

no data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Sensitivity to humidity

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#### 10.4 Conditions to avoid

Heating.

#### 10.5 Incompatible materials

Strong oxidizing agents, Strong bases, Powdered metals

#### 10.6 Hazardous decomposition products

no data available

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### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 730 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - 7,85 mg/l

(OECD Test Guideline 403)

Skin corrosion/irritation

Skin - Rabbit Result: Severe skin irritation (Draize Test)

Serious eye damage/eye irritation

Causes serious eye damage. conjunctivitis Lacrimal irritation due to vapours.

Respiratory or skin sensitisation

Buehler Test - Guinea pig Result: negative (OECD Test Guideline 406) Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Germ cell mutagenicity

Ames test Salmonella typhimurium Result: negative sister chromatid exchange assay Chinese hamster lung cells Result: negative sister chromatid exchange assay Human lymphocytes Result: negative In vitro mammalian cell gene mutation test Chinese hamster ovary cells Result: negative Chromosome aberration test in vitro Chinese hamster ovary cells Result: negative OECD Test Guideline 477 Drosophila melanogaster - male Result: negative

Carcinogenicity

no data available

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Additional Information

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Repeated dose toxicity - Rat - male and female - Oral - 52 Weeks - NOAEL (No observed adverse effect level) - 400 mg/kg - LOAEL (Lowest observed adverse effect level) - 2.000 mg/kg  
Remarks: (in analogy to similar products)  
RTECS: LQ4900000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Kidney - Irregularities - Based on Human Evidence

## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish static test LC50 - Danio rerio (zebra fish) - 130 mg/l - 96 h

(OECD Test Guideline 203)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: ammonium formate Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 365 mg/l - 48 h

(OECD Test Guideline 202)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: ammonium formate Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata - 1.240 mg/l - 72 h

(OECD Test Guideline 201)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: ammonium formate Toxicity to bacteria static test NOEC - activated sludge - 72 mg/l - 13 d  
Remarks: (ECHA)

### 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 14 d Result: 100 % - Readily biodegradable. (OECD Test Guideline 301C)  
Biochemical Oxygen Demand (BOD) 86 mg/g  
Remarks: (External MSDS) Ratio BOD/ThBOD 8,60 %

### 12.3 Bioaccumulative potential

Bioaccumulation is unlikely. Does not significantly accumulate in organisms.

### 12.4 Mobility in soil

no data available



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## 12.5 Results of PBT and vPvB assessment

no data available

## 12.6 Other adverse effects

no data available

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## SECTION 13:

### 13.1 Disposal considerations

#### Product

Recycle to process, if possible. Consult your local regional authorities and an expert of disposal. You may be able to dissolve or mix material with a combustible solvent and little by little burn in a chemical incinerator equipped with an afterburner and scrubber system. If a large amount of the substance is burned at a time, an explosion may occur.

Observe all federal, state and local regulations when disposing of the substance.

#### Contaminated packaging

Dispose of as unused product.

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## SECTION 14: Transport information

### DOT (US)

UN number: 1779

Packing group: II

Class: 8 (3)

Proper shipping name: FORMIC ACID

Reportable Quantity(RQ): no data available

Poison Inhalation Hazard: no data available

Environmental Hazards: no

### IMDG

UN number: 1779

Packing group: II

EMS-No: no data available

Proper shipping name: FORMIC ACID

### IATA

UN number: 1779

Packing group: II

Class: 8 (3)

Proper shipping name: FORMIC ACID

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## SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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## SECTION 16: Other information

### Further information

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with the above product.

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