

Version: v1  
Revision Date: 2023-07-18  
Print Date: 2023-07-25

## SAFETY DATA SHEET

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

#### 1.1 Product identifiers

Product name : Ethyl formate  
Product Number : E110417  
Brand : aladdin  
CAS-No. : 109-94-4

#### 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 2), H225

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 4), H332

Eye irritation (Category 2), H319

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225

Highly Flammable liquid and vapor

- Phone: +1 (833) 552-7181
- Email: [QualityAssurance@aladdinsci.com](mailto:QualityAssurance@aladdinsci.com)
- Website: <https://www.aladdinsci.com/>

H319	Causes serious eye irritation
H335	May cause respiratory irritation
H302+H332	Harmful if swallowed or if inhaled
<b>Precautionary statement(s)</b>	
P210	Keep away from heat, hot surface, sparks, open flames and other ignition sources. - No smoking.
P233	Keep container tightly closed.
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.
P303+P361+P353	IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P337+P313	IF eye irritation persists: Get medical advice/attention.
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.
P403+P235	Store in a well-ventilated place. Keep cool.
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.
P304+P340+P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor. if you feel unwell.

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

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms	: Formic acid ethyl ester Ethyl methanoate Formic acid ethyl ester Ethyl methanoate
Formula	: C3H6O2
Molecular weight	: 74.08
CAS No.	: 109-94-4
EC-NO.	: 203-721-0

Component	Classification	Concentration
Ethyl formate	Flam. Liq. 2; Acute Tox. 4; Eye Irrit. 2; STOT SE 3; H225, H302, H332, H319, H335	standard for GC, ≥99.5%(GC)

- Phone: +1 (833) 552-7181
- Email: [QualityAssurance@aladdinsci.com](mailto:QualityAssurance@aladdinsci.com)
- Website: <https://www.aladdinsci.com/>

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### **General advice**

Show this material safety data sheet to the doctor in attendance.

#### **If inhaled**

After inhalation: fresh air.

#### **In case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

#### **In case of eye contact**

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### **If swallowed**

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 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**

Carbon dioxide (CO<sub>2</sub>) Foam Dry powder

#### **Unsuitable extinguishing media**

no data available

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

Carbon oxides Combustible. Pay attention to flashback. Vapors are heavier than air and may spread along floors. Development of hazardous combustion gases or vapours possible in the event of fire. Forms explosive mixtures with air at ambient temperatures.

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

### 5.4 Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

---

## SECTION 6: Accidental release measures

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

---

- Phone: +1 (833) 552-7181
- Email: [QualityAssurance@aladdinsci.com](mailto:QualityAssurance@aladdinsci.com)
- Website: <https://www.aladdinsci.com/>

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

#### 6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

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

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Dispose of properly. Clean up affected area.

#### 6.4 Reference to other sections

For disposal see section 13.

---

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge. Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance. For precautions see section 2.2.

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

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Moisture sensitive. Storage temperature room temp

#### 7.3 Specific end use(s)

no data available

---

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

Hazard composition and occupational exposure limits

Component	CAS No.	Value	Control parameters	Basis
Ethyl formate	109-94-4	STEL	100 ppm	United States. ACGIH Threshold Limit (TLV)
	Note	Not classified as human carcinogen		
		TWA	100 ppm 300 mg/m <sup>3</sup>	United States. The contact limit recommended by NIOSH

- 
- Phone: +1 (833) 552-7181
  - Email: [QualityAssurance@aladdinsci.com](mailto:QualityAssurance@aladdinsci.com)
  - Website: <https://www.aladdinsci.com/>

		TWA	100 ppm300 mg/m3	U.S.A. Occupational exposure limits (OSHA) - table Z-1 air pollutant limits
		PEL	100 ppm300 mg/m3	Permissible exposure limits for chemical pollutants in California (Article 107, paragraph 8)

## 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

#### Eyeface protection

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

#### 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.

#### Body Protection

Flame retardant antistatic protective clothing.

#### Respiratory protection

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type AX

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

#### Control of environmental exposure

Do not let product enter drains. Risk of explosion.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a) Appearance	form: liquid color: Colorless
b) Odour	no data available
c) Odour Threshold	no data available
d) pH	no data available
e) Melting point/freezing point	-80°C
f) Initial boiling point and boiling range	54°C
g) Flash point	-20°C
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available

- Phone: +1 (833) 552-7181
- Email: [QualityAssurance@aladdinsci.com](mailto:QualityAssurance@aladdinsci.com)
- Website: <https://www.aladdinsci.com/>

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	0.918-0.926
n) Water solubility and ether.	Slightly soluble in water, soluble in most organic solvents such as benzene, ethanol and ether.
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**

The product is chemically stable under standard ambient conditions (room temperature) .

**10.3 Possibility of hazardous reactions**

Exothermic reaction with: sodium Alkali metals Alkaline earth metals Risk of ignition or formation of inflammable gases or vapours with: Oxidizing agents Strong acids and strong bases

**10.4 Conditions to avoid**

Warming.

**10.5 Incompatible materials**

no data available

**10.6 Hazardous decomposition products**

In the event of fire: see section 5

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity**

LD50 Oral - Rat - 1.850 mg/kg Remarks: Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea. (RTECS) LC50 Inhalation - 4 h - 11 mg/l LD50 Dermal - Rabbit - male - > 20.000 mg/kg Remarks: (ECHA)

- Phone: +1 (833) 552-7181
- Email: [QualityAssurance@aladdinsci.com](mailto:QualityAssurance@aladdinsci.com)
- Website: <https://www.aladdinsci.com/>

**Skin corrosion/irritation**

Skin - Rabbit Result: No skin irritation - 24 h Remarks: (ECHA)

**Serious eye damage/eye irritation**

Eyes - Rabbit Result: Eye irritation Remarks: (ECHA) (Regulation (EC) No 1272/2008, Annex VI)

**Respiratory or skin sensitisation**

Maximization Test - In vitro study Result: negative Remarks: (ECHA)

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

no data available

**Reproductive toxicity**

no data available

**Specific target organ toxicity - single exposure**

Inhalation - May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure**

no data available

**Aspiration hazard**

no data available

**Additional Information**

Repeated dose toxicity - Rat - male and female - Oral - 17 Weeks - NOAEL (No observed adverse effect level) - 500 mg/kg  
Remarks: (ECHA) RTECS: LQ8400000 Cough, Shortness of breath, Headache, Nausea, Vomiting, narcosis To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

---

**SECTION 12: Ecological information****12.1 Toxicity**

Toxicity to fish static test LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h (OECD Test Guideline 203) Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 212,5 mg/l - 48 h (OECD Test Guideline 202)

**12.2 Persistence and degradability**

Biodegradability Result: 77,48 % - Readily biodegradable. (OECD Test Guideline 301D)

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

**12.5 Results of PBT and vPvB assessment**

no data available

- 
- Phone: +1 (833) 552-7181
  - Email: [QualityAssurance@aladdinsci.com](mailto:QualityAssurance@aladdinsci.com)
  - Website: <https://www.aladdinsci.com/>

**12.6 Other adverse effects**

no data available

---

**SECTION 13:**

**13.1 Disposal considerations**

**Product**

Dispose of the remaining and non recyclable solution to a licensed company.

**Contaminated packaging**

no data available

---

**SECTION 14: Transport information**

**DOT (US)**

UN number: 1190

Packing group: II

Class: 3

Proper shipping name: ETHYL FORMATE Reportable Quantity(RQ): no data available Poison Inhalation Hazard: no data

Environmental Hazards: no

**IMDG**

UN number: 1190

Packing group: II

EMS-No: no data available

Proper shipping name: ETHYL FORMATE

**IATA**

UN number: 1190

Packing group: II

Class: 3

Proper shipping name: ETHYL FORMATE

---

**SECTION 15: Regulatory information**

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

---

**SECTION 16: Other information**

**Further information**

Copyright Aladdin Co. Ltd. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Aladdin Co. Ltd. and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

Version: v1

Revision Date: 2023-07-18

Print Date: 2023-07-25

- 
- Phone: +1 (833) 552-7181
  - Email: [QualityAssurance@aladdinsci.com](mailto:QualityAssurance@aladdinsci.com)
  - Website: <https://www.aladdinsci.com/>