# ETHYL FORMATE

**CAS NO 109-94-4**

## MATERIAL SAFETY DATA SHEET

**SDS/MSDS**

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

### 1.1 Product identifiers

**Product name**: Ethyl Formate

**CAS-No.**: 109-94-4

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

**Identified uses**: Laboratory chemicals, Industrial & for professional use only.

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

**Company**: Central Drug House (P) Ltd

7/28 Vardaan House

New Delhi -110002

INDIA

**Telephone**: +91 11 49404040

**Email**: care@cdhfinechemical.com

### 1.4 Emergency telephone number

**Emergency Phone #**: +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EC) No 1272/2008**

- 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 Label elements

**Labelling according Regulation (EC) No 1272/2008**

**Pictogram**

![Pictogram](image)

**Signal word**: Danger

**Hazard statement(s)**

- **H225**: Highly flammable liquid and vapour.
- **H302 + H332**: Harmful if swallowed or if inhaled
- **H319**: Causes serious eye irritation.
- **H335**: May cause respiratory irritation.
Precautionary statement(s)
P210  Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261  Avoid breathing vapours.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard Statements

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms : Formic acid ethyl ester

Formula : C₃H₆O₂
Molecular weight : 74.08 g/mol
CAS-No. : 109-94-4
EC-No. : 203-721-0
Index-No. : 607-015-00-7

Hazardous ingredients according to Regulation (EC) No 1272/2008
Component Classification Concentration

Ethyl formate
CAS-No. 109-94-4 Flam. Liq. 2; Acute Tox. 4; Eye <= 100 %
EC-No. 203-721-0 Irrit. 2; STOT SE 3; H225,
Index-No. 607-015-00-7 H302, H332, H319, H335

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

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. 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
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
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
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. 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.

Moisture sensitive.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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.
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 (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engine 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).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. 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
b) Odour No data available
c) Odour Threshold No data available
d) pH No data available
e) Melting point/freezing point Melting point/range: -80 °C - lit.
f) Initial boiling point and boiling range 52 - 54 °C - lit.
g) Flash point -19 °C - closed cup
h) Evaporation rate No data available
i) Flammability (solid, gas) No data available
j) Upper/lower flammability or explosive limits
   Upper explosion limit: 16 % (V)
   Lower explosion limit: 2.8 % (V)
k) Vapour pressure
   783.8 mmHg at 55 °C
   195.9 mmHg at 20 °C
l) Vapour density 2.56 - (Air = 1.0)
m) Relative density 0.921 g/cm³ at 20 °C
n) Water solubility No data available
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 No data available
t) Oxidizing properties No data available

9.2 Other safety information
Relative vapour density 2.56 - (Air = 1.0)

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
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Bases, Oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
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(Ethyl formate)
LD50 Dermal - Rabbit - > 18,420 mg/kg(Ethyl formate)

Skin corrosion/irritation
Skin - Rabbit(Ethyl formate)
Result: Mild skin irritation

Serious eye damage/eye irritation
No data available(Ethyl formate)

Respiratory or skin sensitisation
No data available(Ethyl formate)

Germ cell mutagenicity
No data available(Ethyl formate)

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

Reproductive toxicity
No data available(Ethyl formate)

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.(Ethyl formate)

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available(Ethyl formate)

Additional Information
RTECS: LQ8400000
Cough, Shortness of breath, Headache, Nausea, Vomiting, narcosis(Ethyl formate)

SECTION 12: Ecological information

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available
12.4 Mobility in soil
No data available (Ethyl formate)

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number
ADR/RID: 1190
IMDG: 1190 IATA: 1190

14.2 UN proper shipping name
ADR/RID: ETHYL FORMATE
IMDG: ETHYL FORMATE
IATA: Ethyl formate

14.3 Transport hazard class(es)
ADR/RID: 3
IMDG: 3 IATA: 3

14.4 Packaging group
ADR/RID: II
IMDG: II IATA: II

14.5 Environmental hazards
ADR/RID: no
IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user
No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.
H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed.
H302 + H332 Harmful if swallowed or if inhaled
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

Further information
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. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.