



# SAFETY DATA SHEET

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) (OSHA HCS)

## SECTION 1. IDENTIFICATION

Product name : Ethyl Formate  
Product code : F0053

### Manufacturer or supplier's details

Company name of supplier : TCI America  
Address : 9211 N. Harborside Street Portland, OR 97203 U.S.A.  
Telephone : +1-800-4238616/+1-503-2831681  
Telefax : +1-888-5201075/+1-503-2831987  
E-mail address : sales-US@TCIchemicals.com

Chemical Emergencies: TCI America (8:00am - 5:00pm) PST +1-503-2867624

Transportation Emergencies: Chemtrec 24-Hour +1-800-4249300 (U.S.A.)/+1-703-5273887 (International)

### Recommended use of the chemical and restrictions on use

Recommended use : Use as laboratory reagent

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## SECTION 2. HAZARDS IDENTIFICATION

### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids : Category 2  
Acute toxicity (Oral) : Category 4  
Eye irritation : Category 2A  
Specific target organ toxicity - single exposure : Category 3 (Respiratory system, Central nervous system)

### GHS label elements

Hazard pictograms :



Signal Word : Danger  
Hazard Statements : H225 Highly flammable liquid and vapor.  
H302 Harmful if swallowed.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H336 May cause drowsiness or dizziness.

Precautionary Statements : **Prevention:**  
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. 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 skin 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/ eye protection/ face protection.

### Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and

keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

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 dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Storage:**

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

**Components**

Chemical name	CAS RN	Concentration (% w/w)
Ethyl Formate	109-94-4	>= 90 - <= 100

Actual concentration is withheld as a trade secret

### SECTION 4. FIRST AID MEASURES

If inhaled : Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

In case of skin contact : Take off all contaminated clothing immediately. If on skin, rinse well with water. If skin irritation or rash occurs: Get medical advice/ attention.

In case of eye contact : Rinse with plenty of water. If easy to do, remove contact lens, if worn. If eye irritation persists: Get medical advice/ attention.

If swallowed : Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

Most important symptoms and effects, both acute and delayed : None known.

### SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Dry powder, Foam, Water spray, Carbon dioxide (CO2)

Specific hazards during fire fighting : No information available.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Immediately evacuate personnel to safe areas. Remove undamaged containers from fire area if it is safe to do so.

Special protective equipment for fire-fighters : Use personal protective equipment.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Wear suitable protective equipment. Keep people away from and up-wind of spill/leak. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.

Environmental precautions : Prevent product from entering drains.

Methods and materials for containment and cleaning up : Collect as much of the spill as possible with a suitable absorbent material.

## SECTION 7. HANDLING AND STORAGE

Technical measures	:	Prevent generation of vapor or mist. Take precautionary measures against static discharge. Use explosion-proof equipment.
Local/Total ventilation	:	Ensure adequate ventilation. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Use a local exhaust ventilation.
Advice on safe handling	:	Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not subject to grinding, shock or friction. Wash hands and face thoroughly after handling.
Conditions for safe storage	:	Keep container tightly closed. Store in a cool and shaded area. Keep in a well-ventilated place. Use explosion-proof equipment. Store locked up.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Components	CAS RN	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Ethyl Formate	109-94-4	STEL	100 ppm	ACGIH
		TWA	100 ppm 300 mg/m <sup>3</sup>	NIOSH REL
		TWA	100 ppm 300 mg/m <sup>3</sup>	OSHA Z-1
		TWA	100 ppm 300 mg/m <sup>3</sup>	OSHA P0

**Engineering measures** : Install a closed system or local exhaust. Also install safety shower and eye bath.

### Personal protective equipment

Respiratory protection	:	Gas mask, Self-contained breathing apparatus
Hand protection	:	Impervious gloves
Eye protection	:	Safety glasses, Safety goggles, Face-shield
Skin and body protection	:	Impervious protective clothing

\*Use personal protective equipment (PPE) approved under appropriate government standards and follow local and national regulations.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	colorless
Odor	:	No data available
Odor Threshold	:	31 ppm
pH	:	No data available
Melting point/freezing point	:	-112 °F / -80 °C
Boiling point/boiling range	:	129 °F / 54 °C
Flash point	:	-4 °F / -20 °C
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	16.5 %(V)
Lower explosion limit / Lower flammability limit	:	2.7 %(V)
Vapor pressure	:	25.6 kPa (68 °F / 20 °C)
Relative vapor density	:	2.55
Relative density	:	0.92
Solubility(ies)		
Water solubility	:	105 g/l soluble (68 °F / 20 °C)
Solubility in other solvents	:	
completely miscible	:	Ether Alcohol Benzene Acetone
Partition coefficient: n-octanol/water	:	0.23
Autoignition temperature	:	824 °F / 440 °C
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available

Viscosity, kinematic : No data available  
 Molecular weight : 74.08 g/mol

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity : No data available  
 Chemical stability : Stable under normal conditions.  
 Possibility of hazardous reactions : None under normal processing.  
 Conditions to avoid : Electrical spark Open flame Electrostatic discharge  
 Incompatible materials : Oxidizing agents, Acids, Bases  
 Hazardous decomposition products : Carbon monoxide, Carbon dioxide (CO<sub>2</sub>)

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## SECTION 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

Acute oral toxicity : LD50 (Rat): 1,850 mg/kg

Acute inhalation toxicity : LCLo (Rat): 8000 ppm  
 Exposure time: 4 h  
 Test atmosphere: gas

Acute dermal toxicity : LD50 (Rabbit): > 18.4 g/kg

**Skin corrosion/irritation** : No information available.

**Serious eye damage/eye irritation**  
 Result : Eye irritation

**Respiratory or skin sensitization** : No information available.

**Germ cell mutagenicity** : No information available.

### Carcinogenicity

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

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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

**Reproductive toxicity** : No information available.

### STOT-single exposure

Assessment : May cause respiratory irritation., May cause drowsiness or dizziness.

**STOT-repeated exposure** : No information available.

**Repeated dose toxicity** : No information available.

**Aspiration toxicity** : No information available.

**RTECS No.** : LQ8400000 (Ethyl Formate)

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

No data available

### Persistence and degradability

No data available

### Bioaccumulative potential

Bioconcentration factor (BCF) : 0.88

### Mobility in soil

Distribution among environmental compartments : Koc: 8

### Other adverse effects

#### Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

- Waste from residues : Disposal in accordance with local and national regulations. Take precautions against ignition or explode. Entrust disposal to a licensed waste disposal company.
- Contaminated packaging : Disposal in accordance with local and national regulations. Before disposal of used container, remove contents completely.

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### IATA-DGR

- UN/ID No. : UN 1190
- Proper shipping name : Ethyl formate
- Class : 3
- Packing group : II

#### IMDG-Code

- UN number : UN 1190
- Proper shipping name : ETHYL FORMATE
- Class : 3
- Packing group : II
- EmS Code : F-E, S-D
- Marine pollutant : no

#### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

#### Domestic regulation

##### 49 CFR

- UN/ID/NA number : UN 1190
- Proper shipping name : Ethyl formate
- Class : 3
- Packing group : II
- ERG Code : 129
- Marine pollutant : no

#### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : No SARA Hazards

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMII Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

**US State Regulations****Massachusetts Right To Know**

Ethyl Formate 109-94-4

**Pennsylvania Right To Know**

Ethyl Formate 109-94-4

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

**California List of Hazardous Substances**

Ethyl Formate 109-94-4

**California Permissible Exposure Limits for Chemical Contaminants**

Ethyl Formate 109-94-4

**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

**SECTION 16. OTHER INFORMATION**

Revision Date : 10/25/2024

This SDS was prepared sincerely based on the information obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. The products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling operations, sufficient care should be taken, in addition to the safety measures suitable for the given situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.