

SAFETY DATA SHEET

Issue Date 20-Nov-2025
Revision Number 3.06

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Ethyl Formate
Other means of identification
Product Code(s) 059-01212,051-01216

Recommended use of the chemical and restrictions on use

Recommended Use For research use only.
Uses advised against Seek expert judgment when using for purposes other than those recommended.

Details of the supplier of the safety data sheet

Manufacturer Address	Distributor
FUJIFILM Wako Pure Chemical Corporation	FUJIFILM Irvine Scientific
1-2, Doshomachi 3-Chome,	E. Warner Avenue, Santa Ana, CA 92705-5505, U.S.A.: +1 949 261 7800
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Tel : +81-6-6203-3741	
Fax: +81-6-6201-5964	

2. HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

Flammable liquids	Category 2
Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 1, Category 3
Category 1 respiratory system	
Category 3 Narcotic effects	

Pictograms



Signal word

Danger

Hazard statements

- H225 - Highly flammable liquid and vapor
- H319 - Causes serious eye irritation
- H302 - Harmful if swallowed
- H332 - Harmful if inhaled
- H336 - May cause drowsiness or dizziness
- H370 - Causes damage to the following organs: respiratory system

Precautionary statements-(Prevention)

Do not breathe dust/fume/gas/mist/vapors/spray 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 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. 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 Wear protective gloves/protective clothing/eye protection/face protection
Keep cool

Precautionary statements-(Response)

IF exposed: Call a POISON CENTER or doctor/physician

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention

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

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Call a POISON CENTER or doctor/physician if you feel unwell

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell Rinse mouth

In case of fire: Use suitable extinguishing media for extinction

Precautionary statements-(Storage)

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

Precautionary statements-(Disposal)

Dispose of contents/container to an approved waste disposal plant

Others

Other hazards Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Substance

Formula HCOOC2H5

Chemical Name	Molecular weight	CAS RN	Weight-%
Ethyl formate	74.08	109-94-4	97.0

Impurities and/or Additives: Not applicable

4. FIRST AID MEASURES

First aid measures

General Information Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). If symptoms persist, call a physician.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Inhalation Remove to fresh air.

Ingestion Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing media

Carbon dioxide (CO₂). Foam. Extinguishing powder. Sand.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Vapors may form explosive mixtures with air.

Explosion data

Sensitivity to Mechanical none.

Impact

Sensitivity to Static Discharge none.

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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions, protective equipment and emergency procedures Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods and material for containment and cleaning up Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

Methods for cleaning up

Pick up and transfer to properly labeled containers. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Soak up with inert absorbent material.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical measures Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use with local exhaust ventilation.

Protective measures Ensure adequate ventilation, especially in confined areas. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded. Use with local exhaust ventilation. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities

Storage conditions Keep container protect from light, store in well-ventilated place at room temperature (preferably cool). Keep container tightly closed.

Packaging materials Glass.

Incompatible materials Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

Not applicable

Chemical Name	ACGIH	OSHA PEL	NIOSH IDLH
Ethyl formate 109-94-4	STEL: 100 ppm	TWA: 100 ppm TWA: 300 mg/m ³ (vacated) TWA: 100 ppm (vacated) TWA: 300 mg/m ³	IDLH: 1500 ppm TWA: 100 ppm TWA: 300 mg/m ³

Personal protective equipment

Respiratory protection gas mask for organic gas (JIS T 8152)
Hand protection chemical protective gloves (JIS T 8116)
Eye protection protective eyeglasses or chemical safety goggles (JIS T 8147)
Skin and body protection Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form**Color** colorless**Turbidity** clear**Appearance** liquid**Odor**

characteristic odor

pH

no data available

Melting point/freezing point

-79 °C

Boiling point, initial boiling point and boiling range

54 °C

Flash point

-20 °C

Evaporation rate:

no data available

Flammability (solid, gas):

no data available

Upper/lower flammability or explosive limits**Upper:** 13.5vol%**Lower:** 2.7vol%**Vapour pressure**

25.6kPa

Vapour density

2.55(air=1)

Specific Gravity / Relative density

0.918 - 0.926 g/m L (20°C)

Solubilities

Ethanol , acetone : Very soluble. water : soluble .

n-Octanol/water partition coefficient:(log Pow)

0.23

Auto-ignition temperature:

440 °C

Decomposition temperature:

no data available

Viscosity (coefficient of viscosity)

no data available

Dynamic viscosity

no data available

Particle characteristics

no data available

10. STABILITY AND REACTIVITY

Stability**Chemical stability** May be altered by light.**Reactivity** no data available**Hazardous reactions**

May cause ignition on contact with strong oxidizing agents

Conditions to avoid

Extremes of temperature and direct sunlight, Heat, flames and sparks, static electricity, spark

Incompatible materials

Strong oxidizing agents

Hazardous decomposition productsCarbon monoxide (CO), Carbon dioxide (CO₂)**11. TOXICOLOGICAL INFORMATION****Acute toxicity**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Ethyl formate	1800 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	8000 ppm (Rat) 4 h

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas-source information
Ethyl formate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust-source information	Acute toxicity -inhalation mist-source information
Ethyl formate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Skin irritation/corrosion

Chemical Name	Skin corrosion/irritation source information
Ethyl formate	Based on the NITE GHS classification results.

Serious eye damage/ irritation

Chemical Name	Serious eye damage/irritation source information
Ethyl formate	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Chemical Name	Respiratory or Skin sensitization source information
Ethyl formate	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Chemical Name	germ cell mutagenicity source information
Ethyl formate	Based on the NITE GHS classification results.

Carcinogenicity

Chemical Name	Carcinogenicity source information
Ethyl formate	Based on the NITE GHS classification results.

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Ethyl formate	Based on the NITE GHS classification results.

STOT-single exposure

Chemical Name	STOT -single exposure- source information
Ethyl formate	Based on the NITE GHS classification results.

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
Ethyl formate	Based on the NITE GHS classification results.

Aspiration hazard

Chemical Name	Aspiration Hazard source information
Ethyl formate	Based on the NITE GHS classification results.

12. ECOLOGICAL INFORMATION**Ecotoxicity**

no data available

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ethyl formate 109-94-4	N/A	LC50 : Oncorhynchus mykiss 230 mg/L 96 h	N/A	N/A

Persistence and degradability

No information available

Bioaccumulative potential

No information available

Mobility

no data available

Chemical Name	Partition coefficient
Ethyl formate 109-94-4	1.504

Mobility in soil

No information available

Other Data

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods**Disposal of wastes**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Precautionary including method of disposing contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

DOT

UN/ID No UN1190
 Proper shipping name: Ethyl formate
 UN classification 3
 Subsidiary hazard class
 Packing group II
 Marine pollutant Not applicable

IATA

UN/ID No UN1190
 Proper shipping name: Ethyl formate
 UN classification 3
 Subsidiary hazard class
 Packing group II
 Environmentally Hazardous Substance Not applicable

IMDG

UN/ID No UN1190
 Proper shipping name: Ethyl formate
 UN classification 3
 Subsidiary hazard class
 Packing group II
 Marine pollutant (Sea) Not applicable

15. REGULATORY INFORMATION

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain

any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS RN	Weight-%	SARA 313 - Threshold Values %
Ethyl formate - 109-94-4	109-94-4	97.0	N/A

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any chemicals regulated by Proposition 65

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Ethyl formate 109-94-4	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

Issue Date 20-Nov-2025

Revision Note

No information available

Disclaimer

The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

End of Safety Data Sheet