

Material Safety Data Sheet (MSDS)

Methyl Formate

Revision Date: 25-August-2025

Version: 1.0

Section 1: Product Identification

- **Product Name:** Methyl Formate
- **Chemical Formula:** C₂H₄O₂
- **CAS No:** 107-31-3
- **Synonyms:** Formic acid methyl ester, Methyl methanoate
- **Recommended Use:** Intermediate in chemical synthesis, solvent in industry, and fuel additive.

Section 2: Hazards Identification

- **Classification (GHS):** Flammable Liquid (Category 2), Acute Toxicity Oral (Category 4), Acute Toxicity Inhalation (Category 3).
- **Signal Word:** Danger
- **Hazard Statements:**

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- Highly flammable liquid and vapor
- Harmful if swallowed
- Toxic if inhaled

• **Precautionary Statements:**

- Keep away from heat, sparks, open flames, and hot surfaces
- Avoid breathing vapors
- Wear protective gloves, eye protection, and respiratory protection
- Wash hands thoroughly after handling

Section 3: Composition / Information on Ingredients

- **Concentration:** >95%

Section 4: First Aid Measures

- **Inhalation:** Move victim to fresh air. Provide artificial respiration if needed. Seek immediate medical attention.
- **Skin Contact:** Wash with plenty of soap and water. Remove contaminated clothing. Get medical attention if irritation occurs.
- **Eye Contact:** Rinse cautiously with water for several minutes. Seek immediate medical attention.

- **Ingestion:** Rinse mouth. Do not induce vomiting. Seek immediate medical attention.

Section 5: Fire-Fighting Measures

- **Suitable Extinguishing Media:** Foam, dry chemical, carbon dioxide (CO₂).
- **Specific Hazards:** Vapors may form explosive mixtures with air. Emits carbon oxides under fire conditions.
- **Protective Equipment:** Firefighters should wear self-contained breathing apparatus and protective clothing.

Section 6: Accidental Release Measures

- **Personal Precautions:** Evacuate area. Eliminate ignition sources. Use personal protective equipment and ensure ventilation.
- **Environmental Precautions:** Prevent entry into drains and waterways.
- **Cleanup Methods:** Absorb with inert material (sand, earth). Collect in suitable, closed containers for disposal.

Section 7: Handling and Storage

- **Handling:** Handle in well-ventilated areas. Avoid inhalation and contact with skin/eyes. Keep away from ignition sources.

- **Storage:** Store in tightly closed containers in a cool, dry, well-ventilated place. Protect from direct sunlight and heat sources.

Section 8: Exposure Controls / Personal Protection

- **Exposure Limits:** OSHA PEL: 100 ppm (240 mg/m³) TWA; ACGIH TLV: 100 ppm TWA.
- **Engineering Controls:** Provide adequate ventilation and explosion-proof equipment.
- **Personal Protective Equipment:** Gloves, safety goggles, flame-resistant clothing, respirator if exposure limits are exceeded.

Section 9: Physical and Chemical Properties

- **Appearance:** Colorless liquid
- **Odor:** Ethereal odor
- **Boiling Point:** 31.5 °C
- **Flash Point:** -19 °C (closed cup)
- **Solubility:** Miscible with water, alcohol, and most organic solvents
- **Molecular Weight:** 60.05 g/mol

Section 10: Stability and Reactivity

- **Stability:** Stable under recommended conditions of storage and use.
- **Incompatible Materials:** Strong oxidizing agents, strong bases, acids.
- **Hazardous Decomposition Products:** Carbon oxides under fire conditions.

Section 11: Toxicological Information

- **Routes of Exposure:** Inhalation, ingestion, skin and eye contact.
- **Acute Effects:** Toxic if inhaled. Harmful if swallowed. Causes respiratory, skin, and eye irritation.
- **Chronic Effects:** Prolonged exposure may cause liver, kidney, and central nervous system effects.

Section 12: Ecological Information

- **Ecotoxicity:** Harmful to aquatic life with long-term effects possible.
- **Persistence and Degradability:** Expected to be biodegradable.
- **Bioaccumulative Potential:** Low potential for bioaccumulation due to volatility.

Section 13: Disposal Considerations

- Dispose of contents/container in accordance with local/regional/national regulations. Avoid release into the environment.

Section 14: Transport Information

- **UN Number:** UN 1243
- **Proper Shipping Name:** Methyl Formate
- **Hazard Class:** 3 (Flammable Liquid)
- **Packing Group:** I

Section 15: Regulatory Information

- Complies with Indian chemical safety regulations and listed under international chemical inventories (TSCA, EINECS, etc.).
- Classified as hazardous substance under GHS.

Section 16: Other Information

- **Disclaimer:** The above information is believed to be correct but does not claim to be exhaustive. Users are responsible for verifying suitability under actual conditions of use. **Triveni chemicals** disclaims any liability for damage resulting from handling or contact.

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