

Material Safety Data Sheet (MSDS)

Isovaleraldehyde

Revision Date: 25-September-2025

Version: 1.0

Section 1: Product Identification

- **Product Name:** Isovaleraldehyde
- **Chemical Formula:** C₅H₁₀O
- **CAS No:** 590-86-3
- **Synonyms:** 3-Methylbutanal; Isopentanal
- **Recommended Use:** Used in flavor and fragrance formulations and as an intermediate in organic synthesis.

Section 2: Hazards Identification

- **Classification (GHS):** Flammable Liquid (Category 3); Skin Irritant (Category 2); Eye Irritant (Category 2A); Specific Target Organ Toxicity - Single Exposure (Category 3)
- **Signal Word:** Danger
- **Hazard Statements:**
 - Flammable liquid and vapor
 - Causes skin irritation
 - Causes serious eye irritation
 - May cause respiratory irritation, drowsiness, or dizziness

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• **Precautionary Statements:**

- Keep away from heat, sparks, open flames, and hot surfaces
- Wear protective gloves, protective clothing, and eye protection
- Wash thoroughly after handling
- If inhaled: remove person to fresh air and keep at rest
- If in eyes: rinse cautiously with water for several minutes

Section 3: Composition / Information on Ingredients

- **Concentration:** $\geq 95\%$

Section 4: First Aid Measures

- **Inhalation:** Move person to fresh air. If breathing is difficult, seek medical attention.
- **Skin Contact:** Wash thoroughly with soap and water. Remove contaminated clothing. Seek medical advice if irritation persists.
- **Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses if present. Seek medical advice.
- **Ingestion:** Rinse mouth with water. Do not induce vomiting. Seek medical attention immediately.

Section 5: Fire-Fighting Measures

- **Suitable Extinguishing Media:** Alcohol-resistant foam, dry chemical, carbon dioxide, water spray.
- **Specific Hazards:** Vapors may form explosive mixtures with air. Thermal decomposition produces carbon oxides.
- **Protective Equipment:** Firefighters should wear self-contained breathing apparatus and protective clothing.

Section 6: Accidental Release Measures

- **Personal Precautions:** Eliminate ignition sources. Avoid inhalation of vapors. Ensure adequate ventilation. Use protective equipment.
- **Environmental Precautions:** Prevent release into drains and waterways.
- **Cleanup Methods:** Absorb with inert material (sand/earth). Place in chemical waste container. Wash spill area thoroughly.

Section 7: Handling and Storage

- **Handling:** Avoid contact with eyes and skin. Avoid inhalation of vapors. Use only with adequate ventilation. Keep away from ignition sources.
- **Storage:** Store in tightly closed containers in a cool, dry, well-ventilated place away from heat and sunlight. Ground all equipment.

Section 8: Exposure Controls / Personal Protection

- **Exposure Limits:** ACGIH TLV: 5 ppm (TWA)
- **Engineering Controls:** Provide adequate ventilation, explosion-proof equipment.
- **Personal Protective Equipment:** Safety goggles, chemical-resistant gloves, protective clothing; respirator if ventilation is inadequate.

Section 9: Physical and Chemical Properties

- **Appearance:** Colorless to pale yellow liquid
- **Odor:** unpleasant
- **Boiling Point:** 63 °C
- **Flash Point:** 24 °C
- **Solubility:** Slightly soluble in water; miscible with alcohol and organic solvents
- **Molecular Weight:** 86.13 g/mol

Section 10: Stability and Reactivity

- **Stability:** Stable under recommended storage conditions.
- **Incompatible Materials:** Strong oxidizers, strong acids, bases.
- **Hazardous Decomposition Products:** Carbon oxides.
- **Conditions to Avoid:** Heat, flames, sparks, static discharge.

Section 11: Toxicological Information

- **Routes of Exposure:** Inhalation, ingestion, skin and eye contact.
- **Acute Effects:** Causes skin and eye irritation; may cause respiratory irritation. Oral LD50 (rat): 1,750 mg/kg.
- **Chronic Effects:** Prolonged exposure may cause dermatitis and central nervous system effects.

Section 12: Ecological Information

- **Ecotoxicity:** Harmful to aquatic life.
- **Persistence and Degradability:** Readily biodegradable.
- **Bioaccumulative Potential:** Low.
- **Mobility in Soil:** Mobile; may leach to groundwater.

Section 13: Disposal Considerations

- Dispose of product/container in accordance with local/regional/national regulations. Incineration preferred. Do not release to the environment.

Section 14: Transport Information

- **UN Number:** UN2045
- **Proper Shipping Name:** Isovaleraldehyde

- Hazard Class: 3
- Packing Group: II

Section 15: Regulatory Information

- Listed on major chemical inventories (TSCA, EINECS, etc.).
- Subject to regulations for flammable liquids and occupational exposure limits.
- Classified as hazardous under GHS.

Section 16: Other Information

Disclaimer: The information provided is believed to be correct but does not claim to be exhaustive. Users must verify suitability under actual conditions of use. Triveni Chemicals disclaims liability for damage resulting from handling or contact.

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