



## 1. Product Identification

**Name:** Methanol

**Chemical Formula:** CH<sub>3</sub>OH

**Molecular Weight:** 32.04 g/mol

## 2. Classification according to GHS

- **Highly flammable liquid** – Category 2 (H225)
- **Acute toxicity** – Oral, Dermal, Inhalation – Category 3 (H301, H311, H331)
- **Specific target organ toxicity** – Single or repeated exposure – Category 1 (H370)

## 3. Hazard Statements (H)

- **H225** – Highly flammable liquid and vapor
- **H301** – Toxic if swallowed
- **H311** – Toxic in contact with skin
- **H331** – Toxic if inhaled
- **H370** – Causes damage to organs (e.g., vision, liver)

## 4. Precautionary Statements (P)

### Prevention:

- Wash hands and face thoroughly after handling
- Do not eat, drink, or smoke when using this product
- Keep away from heat, sparks, and flames
- Ground/bond container and receiving equipment to prevent static discharge
- Use non-sparking tools
- Store containers in a cool, well-ventilated place

### Response:

- If ingested or in contact: seek immediate medical attention
- Inhalation: move person to fresh air; provide oxygen or artificial respiration if needed
- Skin contact: wash thoroughly with water and remove contaminated clothing
- Fire: use CO<sub>2</sub>, dry powder, or alcohol-resistant foam; avoid direct water jet

### Storage and Disposal:

- Store locked up in a cool, ventilated area
- Dispose of contents and containers according to local regulations

## 5. Physical and Chemical Properties

- **Flash point:** 11–12 °C
- **Flammable limits:** 6 – 36% in air
- **Autoignition temperature:** ~470 °C
- **Density:** 0.79 g/cm<sup>3</sup>
- **Solubility:** Completely miscible with water
- **Vapor behavior:** Heavier than air; can accumulate in low areas

## 6. Toxicity and Health Effects

- **Numerical toxicity:**
  - Oral LD<sub>50</sub> (rat): 5628 mg/kg
  - Inhalation LC<sub>50</sub> (rat): 87.5 mg/L (6 h)
- **Acute symptoms:** Headache, fatigue, dizziness, nausea, blurred vision, blindness, coma; symptoms may appear or worsen up to several days after exposure
- **Chronic effects:** Damage to vision (optic nerve), central nervous system disorders, liver, kidney, and reproductive system damage
- **Mechanism of toxicity:** Metabolized in the body to formaldehyde and then formic acid, causing metabolic acidosis and cellular toxicity

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