

# D(+)**Camphor Sulfonic Acid** MSDS

## Product Name and Identification

**Product Name:** [D\(+\)\*\*Camphor Sulfonic Acid\*\*](#)

**CAS Number:** 3144-16-9

**Synonyms:** (+)-10-Camphorsulfonic acid, CSA

**Recommended Use:** Used in chemical synthesis and as a resolving agent in research applications

**Restrictions on Use:** Not for direct consumption, medicinal use, or household applications

**Manufacturer/Supplier:** [Insert Manufacturer/Supplier Information]

**Emergency Contact:** [Insert Emergency Contact Information]

## Composition/Ingredients

**Chemical Identity:** D(+)**Camphor Sulfonic Acid**

**Synonyms:** (+)-10-Camphorsulfonic acid

**Molecular Formula:** C<sub>10</sub>H<sub>16</sub>O<sub>4</sub>S

**Molecular Weight:** 232.30 g/mol

**Concentration:** 100%

## Hazards Identification

### GHS Classification:

- Skin Irritation (Category 2)
- Eye Irritation (Category 2A)
- Specific Target Organ Toxicity – Single Exposure (Category 3)

### GHS Label Elements:

- **Pictogram(s):**

□

- **Signal Word:** Warning

### Hazard Statements:

- Causes skin and eye irritation
- May cause respiratory irritation

### Precautionary Statements:

- Avoid inhalation of dust and contact with skin.

- Use in a well-ventilated area.
- Always wear personal protective equipment (PPE).

**Other Hazards:** Reacts violently with strong oxidizing agents.

## First Aid Measures

**Eye Contact:** Flush thoroughly with clean water for at least 15 minutes. Remove contact lenses, if present and easy to do. Seek medical attention if irritation persists.

**Skin Contact:** Wash affected area with soap and water. Remove contaminated clothing. Contact a healthcare professional if irritation occurs.

**Inhalation:** Move to an area with fresh air. If symptoms persist or breathing difficulty occurs, seek medical attention.

**Ingestion:** Rinse mouth with water. Do not induce vomiting. Seek medical advice immediately.

**Note to Physician:** Provide treatment based on symptoms and exposure route.

## Handling and Storage

### Handling:

- Use protective gear to prevent skin and eye contact.
- Avoid breathing in dust.
- Work under a chemical fume hood or in a well-ventilated environment.

### Storage:

- Store in a tightly sealed container in a dry, cool, and ventilated location.
- Keep away from strong oxidizing agents, heat, and moisture.
- Ensure proper labeling of the storage container.

**Special Handling Instructions:** Avoid dusty conditions and ensure materials handle away from incompatible substances.

## Exposure Controls/Personal Protection

**Exposure Limits:** No specific occupational exposure limits established.

### Engineering Controls:

- Provide local exhaust or mechanical ventilation to minimize exposure.
- Install eyewash stations and safety showers near the handling area.

### Personal Protective Equipment (PPE):

- **Eye Protection:** Chemical safety goggles or face shield.
- **Skin Protection:** Impermeable gloves and protective clothing.
- **Respiratory Protection:** Use an appropriate respirator if dust generation or exposure is significant.

### Hygiene Practices:

- Wash hands thoroughly after handling materials.
- Avoid cross-contamination with food, beverages, and personal care items.

## Physical and Chemical Properties

- **Appearance:** White crystalline solid
- **Odor:** Faint camphor-like
- **Melting Point/Range:** 195–200°C
- **Boiling Point/Range:** Not applicable (decomposes before boiling)
- **Flash Point:** Not applicable
- **Solubility:** Soluble in water, alcohol, and most organic solvents
- **Specific Gravity:** ~1.34 g/cm<sup>3</sup> at 25°C
- **pH:** ~1.6 (5% aqueous solution)
- **Vapor Pressure:** Negligible at room temperature
- **Partition Coefficient (Log K<sub>ow</sub>):** Not available

## Stability and Reactivity

**Chemical Stability:** Stable when stored and handled correctly.

**Reactivity:** Reacts with strong oxidizing agents.

**Conditions to Avoid:** High humidity, extreme heat, and open flame.

**Hazardous Decomposition Products:** Sulfur oxides and carbon oxides upon thermal decomposition.

**Possibility of Hazardous Reactions:** Violent reactions upon contact with oxidizers.

## Toxicological Information

**Acute Toxicity:** LD50 (Oral, rat): >2000 mg/kg (estimated)

**Skin Irritation:** Causes irritation upon prolonged or repeated exposure.

**Eye Irritation:** May cause redness, watering, and discomfort.

**Respiratory Sensitization:** Dust may irritate the respiratory tract upon inhalation.

**Carcinogenicity:** Not classified as a carcinogen by OSHA, IARC, or NTP.

**Chronic Effects:** No long-term adverse effects reported from limited exposure data.

## Disposal Considerations

**Waste Disposal Methods:**

Dispose of material and its container in accordance with all applicable local, regional, national, and international regulations. Avoid direct discharge into water systems or drains.

**Special Precautions for Disposal:** Ensure waste is sealed and properly labeled before disposal.

**Disclaimer:** This data is offered for informational purposes only and is not intended to guarantee specific performance for any use. Users must independently evaluate the data for suitability in their application and comply with all applicable regulations.