

Material Safety Data Sheet (MSDS)

4-tert-Butylcyclohexanone

Revision Date: 25-August-2025

Version: 1.0

Section 1: Product Identification

- **Product Name:** 4-tert-Butylcyclohexanone
- **Chemical Formula:** C₁₀H₁₈O
- **CAS No:** 98-53-3
- **Synonyms:** p-tert-Butylcyclohexanone, 4-t-Butylcyclohexanone
- **Recommended Use:** Intermediate in organic synthesis, pharmaceuticals, and fragrances.

Section 2: Hazards Identification

- **Classification (GHS):** Skin Irritant ,Eye Irritant.
- **Signal Word:** Warning
- **Hazard Statements:**
 - Highly flammable liquid and vapor

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- Causes skin irritation
- Causes serious eye irritation
- **Precautionary Statements:**
 - Keep away from heat, sparks, open flames, and hot surfaces
 - Use explosion-proof electrical equipment
 - Wear protective gloves and eye protection
 - Avoid breathing vapors
 - Use only outdoors or in a well-ventilated area
 - Wear protective gloves and eye protection
 - Wash hands thoroughly after handling.

Section 3: Composition / Information on Ingredients

- **Concentration:** >95%

Section 4: First Aid Measures

- **Inhalation:** Move to fresh air. If symptoms occur, seek medical attention.
- **Skin Contact:** Wash with plenty of soap and water. Remove contaminated clothing. Seek medical advice if irritation persists.

- **Eye Contact:** Rinse cautiously with water for several minutes. Seek medical attention if irritation persists.
- **Ingestion:** Rinse mouth. Do not induce vomiting. Seek immediate medical advice.

Section 5: Fire-Fighting Measures

- **Suitable Extinguishing Media:** Water spray, foam, dry chemical, carbon dioxide (CO₂).
- **Specific Hazards:** Emits toxic fumes of carbon oxides under fire conditions.
- **Protective Equipment:** Firefighters should wear self-contained breathing apparatus and protective clothing.

Section 6: Accidental Release Measures

- **Personal Precautions:** Use personal protective equipment. Avoid inhalation and skin/eye contact. Ensure adequate ventilation.
- **Environmental Precautions:** Prevent entry into drains and waterways.
- **Cleanup Methods:** Absorb with inert material (sand, earth). Collect in suitable container for proper disposal.

Section 7: Handling and Storage

- **Handling:** Avoid inhalation of vapors and contact with skin/eyes. Use in well-ventilated areas.
- **Storage:** Store in tightly closed containers in a cool, dry, well-ventilated place. Protect from heat and light.

Section 8: Exposure Controls / Personal Protection

- **Exposure Limits:** Not specifically established for 4-tert-Butylcyclohexanone.
- **Engineering Controls:** Ensure adequate ventilation and local exhaust systems.
- **Personal Protective Equipment:** Gloves, protective goggles, lab coat, respirator if exposure limits are exceeded.

Section 9: Physical and Chemical Properties

- **Appearance:** Colorless to pale yellow liquid
- **Odor:** Mild ketonic odor
- **Boiling Point:** 113-116°C
- **Flash Point:** 96 °C (closed cup)
- **Solubility:** Insoluble in water, soluble in organic solvents such as ethanol and ether
- **Molecular Weight:** 154.25 g/mol

Section 10: Stability and Reactivity

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

Section 11: Toxicological Information

- **Routes of Exposure:** Inhalation, ingestion, skin and eye contact.
- **Acute Effects:** Causes skin and eye irritation. May cause respiratory irritation.
- **Chronic Effects:** Prolonged exposure may cause dermatitis and systemic effects.

Section 12: Ecological Information

- **Ecotoxicity:** Not classified as environmentally hazardous, but large releases may be harmful to aquatic organisms.
- **Persistence and Degradability:** Expected to be biodegradable under normal conditions.
- **Bioaccumulative Potential:** Low to moderate potential for bioaccumulation.

Section 13: Disposal Considerations

- Dispose of contents/container in accordance with local/regional/national regulations. Do not release into the environment.

Section 14: Transport Information

- **UN Number:** Not regulated
- **Proper Shipping Name:** 4-tert-Butylcyclohexanone
- **Hazard Class:** Not classified as dangerous goods
- **Packing Group:** Not applicable

Section 15: Regulatory Information

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