

BUTYL TOLUENE

BUE

CAUTIONARY RESPONSE INFORMATION

Common Synonyms 4-tert-Butyltoluene p-tert-Butyltoluene p-Methyl-tert-butylbenzene 1-Methyl-4-tert-butylbenzene TBT Toluene, p-tert-butyl	Liquid	Colorless	Aromatic gasoline-like odor
<p>Restrict access. Call fire department. Avoid contact with liquid and vapor. Notify local health and pollution control agencies.</p>			
Fire	<p>Combustible. Water may be ineffective on fire. Wear self-contained breathing apparatus and protective clothing. Extinguish with dry chemical, alcohol foam, or CO₂. Cool exposed containers with water.</p>		
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR Irritating to skin, eyes, and respiratory tract. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. IF IN EYES, hold eyelids open and flush with plenty of water.</p> <p>LIQUID Irritating to skin, eyes, and respiratory tract. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED, do not induce vomiting.</p>		
Water Pollution	<p>Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.</p>		

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
 Contain
 Collection Systems: Skim
 Chemical and Physical Treatment: Burn

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** 32; Aromatic hydrocarbons
 2.2 **Formula:** (CH₃)C₄H₉(C₆H₅)
 2.3 **IMO/UN Designation:** 6.1/2667
 2.4 **DOT ID No.:** 2667
 2.5 **CAS Registry No.:** 98-51-1
 2.6 **NAERG Guide No.:** 131
 2.7 **Standard Industrial Trade Classification:** 51129

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Chemical safety goggles, compatible chemical resistant gloves, approved respirator.
- 3.2 **Symptoms Following Exposure:** May be harmful by inhalation, ingestion or skin absorption. Vapor or mist is irritating to the eyes, mucous membrane, upper respiratory tract and skin. May cause headache, tachycardia, abnormal cardiovascular system behavior, central nervous system depression, and hematopoietic depression.
- 3.3 **Treatment of Exposure:** INHALATION: Call for medical aid. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. INGESTION: Do not induce vomiting. EYES: Flush with copious amounts of water for at least 15 minutes. SKIN: Wash with soap and copious amounts of water.
- 3.4 **TLV-TWA:** 1 ppm (as p-tert isomer)
 3.5 **TLV-STEL:** Not listed.
 3.6 **TLV-Ceiling:** Not listed.
 3.7 **Toxicity by Ingestion:** Grade 2; LD₅₀ = 0.9g/kg (mouse)
 3.8 **Toxicity by Inhalation:** Currently not available.
 3.9 **Chronic Toxicity:** Currently not available
 3.10 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
 3.11 **Liquid or Solid Characteristics:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of skin.
 3.12 **Odor Threshold:** Currently not available
 3.13 **IDLH Value:** 100 ppm (as p-tert isomer)
 3.14 **OSHA PEL-TWA:** 10 ppm (as p-tert isomer)
 3.15 **OSHA PEL-STEL:** Not listed.
 3.16 **OSHA PEL-Ceiling:** Not listed.
 3.17 **EPA AEGL:** Not listed

4. FIRE HAZARDS

- 4.1 **Flash Point:** 130°F C.C.
 4.2 **Flammable Limits in Air:** Currently not available
 4.3 **Fire Extinguishing Agents:** Water sprays, carbon dioxide, dry chemical, alcohol foam.
 4.4 **Fire Extinguishing Agents Not to Be Used:** Currently not available
 4.5 **Special Hazards of Combustion Products:** Currently not available
 4.6 **Behavior in Fire:** Currently not available
 4.7 **Auto Ignition Temperature:** Currently not available
 4.8 **Electrical Hazards:** Currently not available
 4.9 **Burning Rate:** Currently not available
 4.10 **Adiabatic Flame Temperature:** Currently not available
 4.11 **Stoichiometric Air to Fuel Ratio:** 71.4 (calc.)
 4.12 **Flame Temperature:** Currently not available
 4.13 **Combustion Molar Ratio (Reactant to Product):** 19.0 (calc.)
 4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** No reaction.
 5.2 **Reactivity with Common Materials:** No reaction.
 5.3 **Stability During Transport:** Stable.
 5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent.
 5.5 **Polymerization:** Will not occur.
 5.6 **Inhibitor of Polymerization:** Not pertinent.

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:** Currently not available
 6.2 **Waterfowl Toxicity:** Currently not available
 6.3 **Biological Oxygen Demand (BOD):** Currently not available
 6.4 **Food Chain Concentration Potential:** Currently not available
 6.5 **GESAMP Hazard Profile:**
 Bioaccumulation: T
 Damage to living resources: 3
 Human Oral hazard: 1
 Human Contact hazard: I
 Reduction of amenities: X

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Currently not available
 7.2 **Storage Temperature:** Currently not available
 7.3 **Inert Atmosphere:** Currently not available
 7.4 **Venting:** Currently not available
 7.5 **IMO Pollution Category:** A
 7.6 **Ship Type:** 2
 7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Keep Away From Food
 8.2 **49 CFR Class:** 6.1
 8.3 **49 CFR Package Group:** III
 8.4 **Marine Pollutant:** No
 8.5 **NFPA Hazard Classification:** Not listed
 8.6 **EPA Reportable Quantity:** Not listed.
 8.7 **EPA Pollution Category:** Not listed.
 8.8 **RCRA Waste Number:** Not listed
 8.9 **EPA FWPCA List:** Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
 9.2 **Molecular Weight:** 148.25
 9.3 **Boiling Point at 1 atm:** 372.2-377.6°F = 189-192°C = 462.2-465.2°K
 9.4 **Freezing Point:** -79.6°F = -62°C = 211.2°K
 9.5 **Critical Temperature:** Currently not available
 9.6 **Critical Pressure:** Currently not available
 9.7 **Specific Gravity:** 0.853
 9.8 **Liquid Surface Tension:** Currently not available
 9.9 **Liquid Water Interfacial Tension:** Currently not available
 9.10 **Vapor (Gas) Specific Gravity:** 5.11
 9.11 **Ratio of Specific Heats of Vapor (Gas):** Currently not available
 9.12 **Latent Heat of Vaporization:** Currently not available
 9.13 **Heat of Combustion:** Currently not available
 9.14 **Heat of Decomposition:** Currently not available
 9.15 **Heat of Solution:** Currently not available
 9.16 **Heat of Polymerization:** Currently not available
 9.17 **Heat of Fusion:** Currently not available
 9.18 **Limiting Value:** Currently not available
 9.19 **Reid Vapor Pressure:** Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	I N S O L U B L E	68	0.019		C U R R E N T L Y N O T A V A I L A B L E	0 25 50 75 100 125 150 175 200 225 250 275 300 325 350 375 400 425 450 475 500 525 550 575 600	0.270 0.286 0.302 0.318 0.333 0.348 0.362 0.377 0.391 0.404 0.418 0.431 0.444 0.457 0.470 0.482 0.494 0.506 0.518 0.529 0.540 0.551 0.562 0.572 0.583