

TERT-BUTYL ACETATE

BYA

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Acetic acid, tert-butyl ester		Liquid	Colorless	Mild
Floats on water. Flammable, irritating vapor is produced.				
<p>Restrict access. Shut off ignition sources and call fire department. Avoid contact with liquid and vapor. Stay upwind and use water spray to "knock down" vapor. Notify local health and pollution control agencies. Protect water intakes.</p>				
Fire	<p>FLAMMABLE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Extinguish with dry chemical foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.</p>			
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR Irritating to eyes, nose, and throat. If inhaled will cause nausea, headache, or difficult breathing. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID Irritating to eyes. Harmful if swallowed. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water.</p>			
Water Pollution	<p>Effects of low concentrations on aquatic life are unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and pollution control authorities. Notify operators of nearby water intakes.</p>			

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
 Dilute and disperse
 Contain
 Collection Systems: Skim
 Chemical and Physical Treatment: Burn
 Clean shore line
 Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 34; Esters
 2.2 Formula: CH₃COOC(CH₃)₂C₂H₅;O₂
 2.3 IMO/UN Designation: Not listed
 2.4 DOT ID No.: 1123
 2.5 CAS Registry No.: 540-88-5
 2.6 NAERG Guide No.: 129
 2.7 Standard Industrial Trade Classification: 51372

3. HEALTH HAZARDS

3.1 **Personal Protective Equipment:** Organic vapor canister or air-supplied mask; chemical goggles or face splash shield.
 3.2 **Symptoms Following Exposure:** INHALATION: Irritation of throat. EYES: Irritation.
 3.3 **Treatment of Exposure:** Currently not available
 3.4 **TLV-TWA:** 200 ppm.
 3.5 **TLV-STEL:** Not listed.
 3.6 **TLV-Ceiling:** Not listed.
 3.7 **Toxicity by Ingestion:** Currently not available
 3.8 **Toxicity by Inhalation:** Currently not available.
 3.9 **Chronic Toxicity:** Minor allergen and irritant.
 3.10 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of eyes or respiratory system, if present in high concentrations the effect is temporary.
 3.11 **Liquid or Solid Characteristics:** Currently not available
 3.12 **Odor Threshold:** Detection in water 4 ppb.
 3.13 **IDLH Value:** 1,500 ppm
 3.14 **OSHA PEL-TWA:** 200 ppm.
 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:** Currently not available
 4.2 **Flammable Limits in Air:** Currently not available
 4.3 **Fire Extinguishing Agents:** Alcohol foam, CO₂, dry chemical
 4.4 **Fire Extinguishing Agents Not to Be Used:** Water may be ineffective.
 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:** 38.1 (calc.)
 4.12 **Flame Temperature:** Currently not available
 4.13 **Combustion Molar Ratio (Reactant to Product):** 12.0 (calc.)
 4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

5.1 **Reactivity with Water:** Currently not available
 5.2 **Reactivity with Common Materials:** Currently not available
 5.3 **Stability During Transport:** Currently not available
 5.4 **Neutralizing Agents for Acids and Cautics:** Currently not available
 5.5 **Polymerization:** Currently not available
 5.6 **Inhibitor of Polymerization:** Currently not available

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:** Not listed

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:** C
 7.6 **Ship Type:** 3
 7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

8.1 **49 CFR Category:** Flammable liquid
 8.2 **49 CFR Class:** 3
 8.3 **49 CFR Package Group:** II
 8.4 **Marine Pollutant:** No
 8.5 **NFPA Hazard Classification:** Not listed
 8.6 **EPA Reportable Quantity:** 5000 pounds
 8.7 **EPA Pollution Category:** D
 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:** 116.16
 9.3 **Boiling Point at 1 atm:** 208°F = 97.8°C = 370.8°K
 9.4 **Freezing Point:** Currently not available
 9.5 **Critical Temperature:** Currently not available
 9.6 **Critical Pressure:** Currently not available
 9.7 **Specific Gravity:** 0.8665 at 20°C; 0.8593 at 25°C
 9.8 **Liquid Surface Tension:** Currently not available
 9.9 **Liquid Water Interfacial Tension:** Currently not available
 9.10 **Vapor (Gas) Specific Gravity:** Currently not available
 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
68	54.075		C		C		C
69	54.032		U		U		U
70	53.989		R		R		R
71	53.948		R		R		R
72	53.909		E		E		E
73	53.870		N		N		N
74	53.832		T		T		T
75	53.796		L		L		L
76	53.760		Y		Y		Y
77	53.725						
			N		N		N
			O		O		O
			T		T		T
			A		A		A
			V		V		V
			A		A		A
			I		I		I
			L		L		L
			A		A		A
			B		B		B
			L		L		L
			A		A		A
			B		B		B
			L		L		L
			E		E		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		C		C		C
	N		U		U		U
	S		R		R		R
	O		R		R		O
	L		E		E		L
	U						U
	B		N		N		B
	L		O		O		L
	E		T		T		E
			A		A		A
			V		V		V
			A		A		A
			I		I		I
			L		L		L
			A		A		A
			B		B		B
			L		L		L
			E		E		E