

TERT-AMYL ACETATE

AYA

CAUTIONARY RESPONSE INFORMATION

Common Synonyms tert-Pentyl acetate		Watery liquid	Colorless to yellow	Banana odor
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. Wear goggles and self-contained breathing apparatus. Extinguish with dry chemical, alcohol 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 dizziness. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID. Irritating to skin and eyes. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water.</p>			
Water Pollution	<p>HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and pollution control officials. Notify operators of nearby water intakes.</p>			

<p>1. CORRECTIVE RESPONSE ACTIONS</p> <p>Stop discharge Contain Collection Systems: Skim</p>	<p>2. CHEMICAL DESIGNATIONS</p> <p>2.1 CG Compatibility Group: 34; Esters 2.2 Formula: CH₃COOC(CH₂)₃C₄H₉ 2.3 IMO/UN Designation: 3.3/1104 2.4 DOT ID No.: 1104 2.5 CAS Registry No.: 625-16-1 2.6 NAERG Guide No.: 129 2.7 Standard Industrial Trade Classification: 51372</p>
<p>3. HEALTH HAZARDS</p> <p>3.1 Personal Protective Equipment: Rubber gloves, chemical goggles or face shield, and lab coat. Organic vapor chemical cartridge respirator for less than 1000 ppm; self-contained breathing apparatus for greater than 1000 ppm.</p> <p>3.2 Symptoms Following Exposure: INHALATION AND INGESTION: Irritates the mucous membrane, depresses the central nervous system and is narcotic. Damage to kidney, liver, and lung can occur. Ingestion may irritate gastro-intestinal tract. EYES: Irritation. SKIN: Irritation.</p> <p>3.3 Treatment of Exposure: Call a physician. INHALATION: Remove from exposure. Administer oxygen if needed. EYES: Flush with water for at least 15 min. SKIN: Remove contaminated clothing and shoes. Wash with soap and water. Subsequent treatment is symptomatic and supportive in nature.</p> <p>3.4 TLV-TWA: Not listed. 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: None 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: If spilled on clothing and allowed to remain may cause smarting and reddening of the skin. 3.12 Odor Threshold: 0.08 ppm 3.13 IDLH Value: Not listed. 3.14 OSHA PEL-TWA: Not listed. 3.15 OSHA PEL-STEL: Not listed. 3.16 OSHA PEL-Ceiling: Not listed. 3.17 EPA AEGL: Not listed</p>	

4. FIRE HAZARDS

- 4.1 **Flash Point:** (est) 79°F C.C.
- 4.2 **Flammable Limits in Air:** 1.00%-7.5%
- 4.3 **Fire Extinguishing Agents:** Water fog in conjunction with alcohol foam, dry chemical or carbon dioxide.
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Water may be ineffective.
- 4.5 **Special Hazards of Combustion Products:** When heated emits acrid fumes.
- 4.6 **Behavior in Fire:** When exposed to flames can react vigorously with oxidizing material.
- 4.7 **Auto Ignition Temperature:** (est) 715°F.
- 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:** 45.2 (calc.)
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** 14.0 (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:** Not pertinent
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
- 5.5 **Polymerization:** Not pertinent
- 5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:** 65 ppm/96 hr/mosquito fish/TL_m/turbid water.
120 ppm/48 hr/daphnia/TL_m/24°C.
53 ppm/24 hr/brine shrimp/TL_m.
- 6.2 **Waterfowl Toxicity:** Currently not available
- 6.3 **Biological Oxygen Demand (BOD):** 53%, 5 days 62%, 10 days 70%, 15 days 80%, 20 days
- 6.4 **Food Chain Concentration Potential:** None
- 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Data not available
- 7.2 **Storage Temperature:** Ambient
- 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:** III
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:**
- | | |
|---------------------------|----------------|
| Category | Classification |
| Health Hazard (Blue)..... | 1 |
| Flammability (Red)..... | 3 |
| Instability (Yellow)..... | 0 |
- 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:** Yes

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
- 9.2 **Molecular Weight:** 130.18
- 9.3 **Boiling Point at 1 atm:** 256.5°F = 124.7°C = 397.9°K
- 9.4 **Freezing Point:** >-148°F = >-100°C = > 173°K
- 9.5 **Critical Temperature:** (est.) 609°F = 320.7°C = 593.9°K
- 9.6 **Critical Pressure:** 395 psia = 26.9 atm = 2.73 MN/m²
- 9.7 **Specific Gravity:** 0.874 at 19°C
- 9.8 **Liquid Surface Tension:** (est.) 29.2 dynes/cm = 0.0292 N/m at 20°C
- 9.9 **Liquid Water Interfacial Tension:** 43.8 dynes/cm = 0.0438 N/m at 20°C
- 9.10 **Vapor (Gas) Specific Gravity:** 4.5
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** (est.) > 1 - 1.1
- 9.12 **Latent Heat of Vaporization:** (est.) 126.6 Btu/lb = 70.3 cal/g = 2.94 X 10⁵ J/kg
- 9.13 **Heat of Combustion:** (est.) -14,402 Btu/lb = -8000 cal/g = -334.9 X 10⁵ J/kg
- 9.14 **Heat of Decomposition:** Not pertinent
- 9.15 **Heat of Solution:** Not pertinent
- 9.16 **Heat of Polymerization:** Not pertinent
- 9.17 **Heat of Fusion:** Currently not available
- 9.18 **Limiting Value:** Currently not available
- 9.19 **Reid Vapor Pressure:** Currently not available

NOTES

TERT-AMYL ACETATE

AYA

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
50	54.552	20	0.702	68	7.158	609	0.028
60	54.213						
70	53.874						
80	53.535						
90	53.195						
100	52.856						
110	52.517						
120	52.178						
130	51.839						
140	51.500						
150	51.160						
160	50.821						
170	50.482						
180	50.143						
190	49.804						
200	49.465						
210	49.125						

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	20	-1.194	55	0.00346	68	34.580
	N	30	-1.747	60	0.00394		
	S	40	-0.300	65	0.00449		
	O	50	-0.853	70	0.00511		
	L	60	0.593	75	0.00582		
	U	70	0.040	80	0.00662		
	B	80	0.513	85	0.00754		
	L	90	1.066	90	0.00858		
	E	100	1.620	95	0.00977		
		110	2.173	100	0.01113		
		120	2.726	105	0.01267		
		130	3.279	110	0.01442		
		140	3.833	115	0.01642		
		150	4.386	120	0.01869		
		160	4.939				
		170	5.492				
		180	6.045				
		190	6.599				
		200	7.152				
		210	7.705				
		220	8.258				
		230	8.812				
		240	9.365				
		250	9.918				