

1-ISOBUTYRATE

TMP

CAUTIONARY RESPONSE INFORMATION			
Common Synonyms Texanol	Liquid	Colorless	Mild, characteristic Floats on water.
Shut off ignition sources and call fire department. Notify local health and pollution control agencies.			
Fire	Combustible. Wear full protective clothing with self-contained breathing apparatus. Extinguish fire with dry chemical, alcohol foam, carbon dioxide.		
Exposure	CALL FOR MEDICAL AID. VAPOR Move victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. LIQUID Remove contaminated clothing and shoes. Wash affected areas with soap and water. IF IN EYES, hold eyelids open and flush with plenty of water.		
Water Pollution	Effect of low concentrations on aquatic life is unknown. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.		

1. CORRECTIVE RESPONSE ACTIONS	2. CHEMICAL DESIGNATIONS
Stop discharge Contain Collection Systems: Skim	2.1 CG Compatibility Group: 34; Esters 2.2 Formula: $(\text{CH}_3)_2\text{CHCHOHC}(\text{CH}_3)\text{CH}_2\text{OCOCH}(\text{CH}_3)_2$ 2.3 IMO/UN Designation: Currently not available 2.4 DOT ID No.: Not listed 2.5 CAS Registry No.: 25265-77-4 2.6 NAERG Guide No.: Not listed 2.7 Standard Industrial Trade Classification: 51375
3. HEALTH HAZARDS	
3.1 Personal Protective Equipment: Where splashing is possible wear full face shield or chemical safety goggles.	
3.2 Symptoms Following Exposure: Exposure can cause mild irritation of eyes, nose and throat.	
3.3 Treatment of Exposure: Get medical attention. INHALATION: Remove to fresh air. EYES: Flush with water for at least 15 min., lifting lids occasionally. SKIN: Remove contaminated clothing and shoes. Wash with soap and water.	
3.4 TLV-TWA: Not listed.	
3.5 TLV-STEL: Not listed.	
3.6 TLV-Ceiling: Not listed.	
3.7 Toxicity by Ingestion: Grade 2; oral rat LD ₅₀ = 3.2 - 6.4 g/kg	
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 the skin.	
3.12 Odor Threshold: Currently not available	
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 A EGL: Not listed	

4. FIRE HAZARDS	7. SHIPPING INFORMATION
4.1 Flash Point: 248°F C.C.	7.1 Grades of Purity: Technical grades.
4.2 Flammable Limits in Air: LFL: 0.62% at 300°F; UFL: 4.24% at 393°F.	7.2 Storage Temperature: Ambient.
4.3 Fire Extinguishing Agents: Dry chemical, alcohol foam, or carbon dioxide.	7.3 Inert Atmosphere: No requirement.
4.4 Fire Extinguishing Agents Not to Be Used: Since material is lighter than water and insoluble, fire could be spread by using water in an uncontaminated area.	7.4 Venting: Open.
4.5 Special Hazards of Combustion Products: Irritating vapors and toxic gases, such as carbon dioxide and carbon monoxide, may be formed when involved in fire.	7.5 IMO Pollution Category: C
4.6 Behavior in Fire: Currently not available	7.6 Ship Type: 3
4.7 Auto Ignition Temperature: Currently not available	7.7 Barge Hull Type: Currently not available
4.8 Electrical Hazards: Not listed.	8. HAZARD CLASSIFICATIONS
4.9 Burning Rate: Currently not available	8.1 49 CFR Category: Not listed.
4.10 Adiabatic Flame Temperature: Currently not available	8.2 49 CFR Class: Not pertinent.
4.11 Stoichiometric Air to Fuel Ratio: 78.5 (calc.)	8.3 49 CFR Package Group: Not listed.
4.12 Flame Temperature: Currently not available	8.4 Marine Pollutant: No
4.13 Combustion Molar Ratio (Reactant to Product): 24.0 (calc.)	8.5 NFPA Hazard Classification:
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed	Category Classification Health Hazard (Blue)..... 0 Flammability (Red)..... 1 Instability (Yellow)..... 0
9. PHYSICAL & CHEMICAL PROPERTIES	
9.1 Physical State at 15°C and 1 atm: Liquid	
9.2 Molecular Weight: 216.31	
9.3 Boiling Point at 1 atm: 471°F = 244°C = 517°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: 0.95 @ 20°C.	
9.8 Liquid Surface Tension: Currently not available	
9.9 Liquid Water Interfacial Tension: Currently not available	
9.10 Vapor (Gas) Specific Gravity: 7.45	
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: 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

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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	7.930		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	189 356	0.019 2.418	189 356	0.00060 0.05973		C U R R E N T L Y N O T A V A I L A B L E