

ISOBUTYL ISOBUTYRATE

B|B

CAUTIONARY RESPONSE INFORMATION			
Common Synonyms	Liquid	Colorless	Fruity odor
Floats on water.			
<p>Wear full impervious protective clothing and approved respirator. Shut off all possible sources of ignition. Call fire department. Notify local health and pollution control agencies.</p>			
Fire	Flammable. Vapors can flow to distant ignition source and flash back. Wear full protective clothing with self-contained breathing apparatus. Extinguish fire with dry chemical, alcohol foam, carbon dioxide. Use water spray to cool exposed containers.		
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.		
4. FIRE HAZARDS 4.1 Flash Point: 99°F C.C. 4.2 Flammable Limits in Air: Currently not available 4.3 Fire Extinguishing Agents: Dry chemical, alcohol foam, or carbon dioxide. 4.4 Fire Extinguishing Agents Not to Be Used: Water. 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. 4.6 Behavior in Fire: Vapors can flow along surfaces to distant ignition source and flash back. 4.7 Auto Ignition Temperature: Currently not available 4.8 Electrical Hazards: Not listed. 4.9 Burning Rate: Currently not available 4.10 Adiabatic Flame Temperature: Currently not available 4.11 Stoichiometric Air to Fuel Ratio: 52.4 (calc.) 4.12 Flame Temperature: Currently not available 4.13 Combustion Molar Ratio (Reactant to Product): 16.0 (calc.) 4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed			
7. SHIPPING INFORMATION 7.1 Grades of Purity: 99%; technical. 7.2 Storage Temperature: Ambient. 7.3 Inert Atmosphere: No requirement. 7.4 Venting: Pressure vacuum valve. 7.5 IMO Pollution Category: B 7.6 Ship Type: 3 7.7 Barge Hull Type: Currently not available			
8. HAZARD CLASSIFICATIONS 8.1 49 CFR Category: Not listed 8.2 49 CFR Class: Not pertinent 8.3 49 CFR Package Group: Not listed. 8.4 Marine Pollutant: Yes 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: 144.24 9.3 Boiling Point at 1 atm: 299.7°F = 148.7°C = 421.7°K 9.4 Freezing Point: -113.3°F = -80.7°C = 192.3°K 9.5 Critical Temperature: Currently not available			

1. CORRECTIVE RESPONSE ACTIONS	2. CHEMICAL DESIGNATIONS
Stop discharge	2.1 CG Compatibility Group: 34; Esters
Contain	2.2 Formula: (CH ₃) ₂ CHCOOCH ₂ CH(CH ₃) ₂
Collection Systems: Skim	2.3 IMO/UN Designation: Currently not available
Clean shore line	2.4 DOT ID No.: Not listed
Salvage waterfowl	2.5 CAS Registry No.: 97-85-8
Chemical and Physical Treatment: Burn	2.6 NAERG Guide No.: Not listed.
	2.7 Standard Industrial Trade Classification: 51375
3. HEALTH HAZARDS	
<p>3.1 Personal Protective Equipment: Full impervious protective clothing, including boots and gloves. Where splashing is possible wear full face shield or chemical safety goggles. Use approved respirator to protect against vapors.</p> <p>3.2 Symptoms Following Exposure: Exposure can cause irritation of eyes, nose and throat. Toxic by inhalation.</p> <p>3.3 Treatment of Exposure: Get medical attention. INHALATION: Remove to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. EYES: Flush with water for at least 15 min., lifting lids occasionally. SKIN: Remove contaminated clothing and shoes. Wash with soap and water.</p> <p>3.4 TLV-TWA: Not listed.</p> <p>3.5 TLV-STEL: Not listed.</p> <p>3.6 TLV-Ceiling: Not listed.</p> <p>3.7 Toxicity by Ingestion: Grade 2; oral rat LD₅₀ = 12.8 g/kg</p> <p>3.8 Toxicity by Inhalation: Currently not available.</p> <p>3.9 Chronic Toxicity: Currently not available</p> <p>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.</p> <p>3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.</p> <p>3.12 Odor Threshold: Currently not available</p> <p>3.13IDLH Value: Not listed.</p> <p>3.14 OSHA PEL-TWA: Not listed.</p> <p>3.15 OSHA PEL-STEL: Not listed.</p> <p>3.16 OSHA PEL-Ceiling: Not listed.</p> <p>3.17 EPA AEGL: Not listed</p>	

4. FIRE HAZARDS		7. SHIPPING INFORMATION	
4.1	Flash Point: 99°F C.C.	7.1	Grades of Purity: 99%; technical.
4.2	Flammable Limits in Air: Currently not available	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: Water.	7.4	Venting: Pressure vacuum valve.
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: B
4.6	Behavior in Fire: Vapors can flow along surfaces to distant ignition source and flash back.	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.	<hr/>	
4.9	Burning Rate: Currently not available	8. HAZARD CLASSIFICATIONS	
4.10	Adiabatic Flame Temperature: Currently not available	8.1	49 CFR Category: Not listed
4.11	Stoichiometric Air to Fuel Ratio: 52.4 (calc.)	8.2	49 CFR Class: Not pertinent
4.12	Flame Temperature: Currently not available	8.3	49 CFR Package Group: Not listed.
4.13	Combustion Molar Ratio (Reactant to Product): 16.0 (calc.)	8.4	Marine Pollutant: Yes
4.14	Minimum Oxygen Concentration for Combustion (MOCC): Not listed	8.5	NFPA Hazard Classification: Not listed
<hr/>		8.6	EPA Reportable Quantity: Not listed.
5. CHEMICAL REACTIVITY		8.7	EPA Pollution Category: Not listed.
5.1	Reactivity with Water: No reaction.	8.8	RCRA Waste Number: Not listed
5.2	Reactivity with Common Materials: Currently not available	8.9	EPA FWPCA List: Not listed
5.3	Stability During Transport: Stable.	<hr/>	
5.4	Neutralizing Agents for Acids and Caustics: Not pertinent.	9. PHYSICAL & CHEMICAL PROPERTIES	
5.5	Polymerization: Will not polymerize.	9.1	Physical State at 15° C and 1 atm: Liquid
5.6	Inhibitor of Polymerization: Not pertinent.	9.2	Molecular Weight: 144.24
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6. WATER POLLUTION		9.4	Freezing Point: -113.3°F = -80.7°C = 192.3K
6.1	Aquatic Toxicity: Currently not available	9.5	Critical Temperature: Currently not available
6.2	Watertowl Toxicity: Currently not available	9.6	Critical Pressure: Currently not available
6.3	Biological Oxygen Demand (BOD): Currently not available	9.7	Specific Gravity: 0.853 - 0.857 @ 20°C.
6.4	Food Chain Concentration Potential: Currently not available	9.8	Liquid Surface Tension: Currently not available
6.5	GESAMP Hazard Profile: Not listed	9.9	Liquid Water Interfacial Tension: Currently not available

NOTES

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BIB

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	7.100		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
	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