

# N-ETHYL-N-BUTYLAMINE

EBA

CAUTIONARY RESPONSE INFORMATION				4. FIRE HAZARDS	7. SHIPPING INFORMATION								
Common Synonyms Butylethylamine Ethylbutylamine	Liquid Floats and mixes with water;	Water-white	Amine	<p>4.1 Flash Point: 65°F O.C. 56°F C.C.</p> <p>4.2 Flammable Limits in Air: Currently not available</p> <p>4.3 Fire Extinguishing Agents: Water spray or fog, CO<sub>2</sub>, dry chemical or foam.</p> <p>4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective.</p> <p>4.5 Special Hazards of Combustion Products: May include nitrogen oxides.</p> <p>4.6 Behavior in Fire: When exposed to heat or flame, can react vigorously with oxidizing materials.</p> <p>4.7 Auto Ignition Temperature: Currently not available</p> <p>4.8 Electrical Hazards: Currently not available</p> <p>4.9 Burning Rate: Currently not available</p> <p>4.10 Adiabatic Flame Temperature: Currently not available</p> <p>4.11 Stoichiometric Air to Fuel Ratio: 51.2 (calc.)</p> <p>4.12 Flame Temperature: Currently not available</p> <p>4.13 Combustion Molar Ratio (Reactant to Product): 14.5 (calc.)</p> <p>4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed</p>	<p>7.1 Grades of Purity: 99%.</p> <p>7.2 Storage Temperature: Ambient</p> <p>7.3 Inert Atmosphere: Currently not available</p> <p>7.4 Venting: Currently not available</p> <p>7.5 IMO Pollution Category: (C)</p> <p>7.6 Ship Type: 3</p> <p>7.7 Barge Hull Type: 3</p>								
Fire	FLAMMABLE POISONOUS GASES MAY BE PRODUCED IN FIRE. Vapors may explode if ignited in an enclosed area. Flashback along vapor trail may occur. Wear goggles, self-contained breathing apparatus and rubber overclothing (including gloves). Shut off ignition sources and call fire department. Notify local health and pollution control agencies. Protect water intakes.				8. HAZARD CLASSIFICATIONS								
Exposure	CALL FOR MEDICAL AID.  VAPOR Irritating to eyes, nose and throat. Harmful if inhaled. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.  LIQUID Will burn skin and eyes. Harmful if swallowed. 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 and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.				<p>8.1 49 CFR Category: Not listed</p> <p>8.2 49 CFR Class: Not pertinent</p> <p>8.3 49 CFR Package Group: Not listed.</p> <p>8.4 Marine Pollutant: No</p> <p>8.5 NFPA Hazard Classification:</p> <table> <thead> <tr> <th>Category</th> <th>Classification</th> </tr> </thead> <tbody> <tr> <td>Health Hazard (Blue).....</td> <td>3</td> </tr> <tr> <td>Flammability (Red).....</td> <td>3</td> </tr> <tr> <td>Instability (Yellow).....</td> <td>0</td> </tr> </tbody> </table> <p>8.6 EPA Reportable Quantity: Not listed.</p> <p>8.7 EPA Pollution Category: Not listed.</p> <p>8.8 RCRA Waste Number: Not listed</p> <p>8.9 EPA FWC List: Not listed</p>	Category	Classification	Health Hazard (Blue).....	3	Flammability (Red).....	3	Instability (Yellow).....	0
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Health Hazard (Blue).....	3												
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Instability (Yellow).....	0												
Water Pollution	Effect of low concentration 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.				9. PHYSICAL & CHEMICAL PROPERTIES								
1. CORRECTIVE RESPONSE ACTIONS Dilute and disperse Stop discharge Contain Collection Systems: Skim Do not burn	2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: Not listed. 2.2 Formula: C <sub>9</sub> H <sub>13</sub> NHC <sub>2</sub> H <sub>5</sub> 2.3 IMO/UN Designation: 3.2/2733 2.4 DOT ID No.: 2733 2.5 CAS Registry No.: Currently not available 2.6 NAERG Guide No.: 132 2.7 Standard Industrial Trade Classification: 51451				<p>9.1 Physical State at 15° C and 1 atm: Liquid</p> <p>9.2 Molecular Weight: 101.2</p> <p>9.3 Boiling Point at 1 atm: 227.3°F = 108.5°C = 381.7°K</p> <p>9.4 Freezing Point: Currently not available</p> <p>9.5 Critical Temperature: (Est.) 565.7°F = 296.5°C = 569.6°K</p> <p>9.6 Critical Pressure: (Est.) 440.9 psia = 30 atm = 3.04 MN/m<sup>2</sup></p> <p>9.7 Specific Gravity: 0.7398 at 20°C</p> <p>9.8 Liquid Surface Tension: (Est.) 21 dynes/cm = 0.021 N/m at 20°C</p> <p>9.9 Liquid Water Interfacial Tension: (Est.) 54 dynes/cm = 0.054 N/m at 20°C</p> <p>9.10 Vapor (Gas) Specific Gravity: 3.5</p> <p>9.11 Ratio of Specific Heats of Vapor (Gas): (Est.) &gt;1 at 20°C (68°F)</p> <p>9.12 Latent Heat of Vaporization: 153 Btu/lb = 85.0 cal/g = 3.56 X 10<sup>6</sup> J/kg</p> <p>9.13 Heat of Combustion: -17431 Btu/lb = -9684 cal/g = -405 X 10<sup>6</sup> J/kg</p> <p>9.14 Heat of Decomposition: Not pertinent</p> <p>9.15 Heat of Solution: Not pertinent</p> <p>9.16 Heat of Polymerization: Not pertinent</p> <p>9.17 Heat of Fusion: Currently not available</p> <p>9.18 Limiting Value: Currently not available</p> <p>9.19 Reid Vapor Pressure: Currently not available</p>								
3. HEALTH HAZARDS  3.1 Personal Protective Equipment: Wear safety goggles, rubber gloves and apron, respiratory protective equipment, non sparking shoes. 3.2 Symptoms Following Exposure: INHALATION: Irritation of mucous membranes and lungs. EYES: Irritation. Corrosive, may cause blindness - Irreversible. SKIN: Irritation. Corrosive. INGESTION: Nausea and salivation. 3.3 Treatment of Exposure: Get medical aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. EYES: Flush with plenty of water for at least 15 minutes. SKIN: Flush with soap and water. INGESTION: Give large amount of water or milk. DO NOT induce vomiting. 3.4 TLV-TWA: Not listed. 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 3: LD <sub>50</sub> = 50 to 500 mg/kg. 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Currently not available. 3.10 Vapor (Gas) Irritant Characteristics: Currently not available. 3.11 Liquid or Solid Characteristics: Severe skin irritant. Causes second and third degree burns on short contact and is very injurious to the eyes. 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 AEGL: Not listed.	3. HEALTH HAZARDS  3.1 Personal Protective Equipment: Wear safety goggles, rubber gloves and apron, respiratory protective equipment, non sparking shoes. 3.2 Symptoms Following Exposure: INHALATION: Irritation of mucous membranes and lungs. EYES: Irritation. Corrosive, may cause blindness - Irreversible. SKIN: Irritation. Corrosive. INGESTION: Nausea and salivation. 3.3 Treatment of Exposure: Get medical aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. EYES: Flush with plenty of water for at least 15 minutes. SKIN: Flush with soap and water. INGESTION: Give large amount of water or milk. DO NOT induce vomiting. 3.4 TLV-TWA: Not listed. 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 3: LD <sub>50</sub> = 50 to 500 mg/kg. 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Currently not available. 3.10 Vapor (Gas) Irritant Characteristics: Currently not available. 3.11 Liquid or Solid Characteristics: Severe skin irritant. Causes second and third degree burns on short contact and is very injurious to the eyes. 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 AEGL: Not listed.				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								
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	46.147		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	5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125	0.052 0.060 0.071 0.083 0.097 0.113 0.132 0.154 0.180 0.211 0.246 0.288 0.336 0.393 0.459 0.537 0.627 0.733 0.857 1.001 1.170 1.367 1.598 1.868 2.183	5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125	0.00096 0.00111 0.00128 0.00147 0.00169 0.00195 0.00224 0.00258 0.00297 0.00342 0.00394 0.00454 0.00523 0.00602 0.00693 0.00798 0.00919 0.01058 0.01218 0.01403 0.01616 0.01860 0.02142 0.02466 0.02840		C U R R E N T L Y  N O T  A V A I L A B L E