

N-BUTYL PROPIONATE

BPN

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Propanoic acid butyl ester Propionic acid butyl ester	Liquid Colorless to straw yellow
<p>Wear full impervious protective clothing and approved respirator. Avoid contact with liquid and vapor. Remove all ignition sources. Call the fire department. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	<p>Combustible. Wear full chemical protective clothing and self-contained breathing apparatus. Extinguish fire with dry chemical, alcohol foam, or carbon dioxide.</p>
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR Move victim to fresh air. If breathing is difficult, give oxygen.</p> <p>LIQUID Irritating to skin and eyes. Remove contaminated clothing and shoes. Flush skin with water. IF IN EYES, hold eyelids open and flush with plenty of water.</p>
Water Pollution	<p>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.</p>

<p>1. CORRECTIVE RESPONSE ACTIONS</p> <p>Stop discharge Contain Collection Systems: Skim Clean shore line Salvage waterfowl Chemical and Physical Treatment: Burn</p>	<p>2. CHEMICAL DESIGNATIONS</p> <p>2.1 CG Compatibility Group: Not listed. 2.2 Formula: CH₃CH₂COO(CH₂)₃CH₃ 2.3 IMO/UN Designation: Currently not available 2.4 DOT ID No.: 1914 2.5 CAS Registry No.: 590-012 2.6 NAERG Guide No.: 130 2.7 Standard Industrial Trade Classification: 51377</p>
<p>3. HEALTH HAZARDS</p> <p>3.1 Personal Protective Equipment: Wear full impervious protective clothing and approved respirator. 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: Contact will cause eye and skin irritation. Vapor exposure may cause eye and respiratory tract irritation.</p> <p>3.3 Treatment of Exposure: Get medical attention. INHALATION: Remove to fresh air. If breathing is difficult, give oxygen. EYES: Flush with water for at least 15 min., lifting lids occasionally. SKIN: Remove contaminated clothing and shoes. Flush with water.</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: Currently not available 3.10 Vapor (Gas) Irritant Characteristics: Currently not available 3.11 Liquid or Solid Characteristics: Currently not available 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</p>	

4. FIRE HAZARDS

- 4.1 **Flash Point:** 101°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 and toxic gases, such as carbon dioxide and carbon monoxide, may be produced in fire.
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:** 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

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 99%; varying concentrations available.
7.2 **Storage Temperature:** Ambient.
7.3 **Inert Atmosphere:** No requirement.
7.4 **Venting:** Not listed.
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)..... | 2 |
| Flammability (Red)..... | 3 |
| Instability (Yellow)..... | 0 |
- 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

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** No reaction.
5.2 **Reactivity with Common Materials:** Currently not available
5.3 **Stability During Transport:** Stable.
5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent.
5.5 **Polymerization:** Will not polymerize.
5.6 **Inhibitor of Polymerization:** Not pertinent.

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
9.2 **Molecular Weight:** 130.19
9.3 **Boiling Point at 1 atm:** 296.2°F = 146.8°C = 419.8°K
9.4 **Freezing Point:** -128KF = -89°C = 184°K
9.5 **Critical Temperature:** Currently not available
9.6 **Critical Pressure:** Currently not available
9.7 **Specific Gravity:** 0.8754
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:** 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

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:**
Bioaccumulation: T
Damage to living resources: 2
Human Oral hazard: 0
Human Contact hazard: I
Reduction of amenities: X

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
	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

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
68	7.310		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