

TERT-BUTYLAMINE

BUA

CAUTIONARY RESPONSE INFORMATION

Common Synonyms 2-Aminoisobutane 2-Amino-2-methylpropane 1,1-Dimethylethylamine TBA Trimethylaminomethane	Liquid Colorless Ammonia-like odor Floats and mixes with water. Flammable, irritating vapor is produced.
Restrict access. Evacuate. Shut off ignition sources and call fire department. Avoid contact with liquid and vapor. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Stay upwind and use water spray to "knock down" vapor. Notify local health and pollution control agencies. Protect water intakes.	
Fire	FLAMMABLE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Extinguish with dry chemical, alcohol foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.
Exposure	CALL FOR MEDICAL AID. VAPOR Irritating to eyes, nose and throat. If inhaled, will cause difficult breathing. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. LIQUID Irritating to 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.
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

Dilute and disperse
Stop discharge

2. CHEMICAL DESIGNATIONS

- 2.1 **CG Compatibility Group:** 7; Aliphatic amine
 2.2 **Formula:** (CH₃)₃CNH₂
 2.3 **IMO/UN Designation:** 3.2/1993
 2.4 **DOT ID No.:** Not listed
 2.5 **CAS Registry No.:** 75-64-9
 2.6 **NAERG Guide No.:** Not listed.
 2.7 **Standard Industrial Trade Classification:** 51489

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Self-contained breathing apparatus; goggles or face shield; rubber gloves
 3.2 **Symptoms Following Exposure:** Inhalation causes irritation of nose, mouth, and lungs. Ingestion causes irritation of mouth and stomach. Contact with liquid causes severe irritation of eyes and moderate irritation of skin.
 3.3 **Treatment of Exposure:** INHALATION: move to fresh air; give artificial respiration if breathing has stopped. INGESTION: give large amounts of water and induce vomiting. EYES: immediately flush with water for at least 15 min.; get medical attention. SKIN: flush with water; 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 3; oral LD₅₀ = 180 mg/kg (rat)
 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

4. FIRE HAZARDS

- 4.1 **Flash Point:** 16°F C.C.
 4.2 **Flammable Limits in Air:** 1.7%-8.9% (at 212°F)
 4.3 **Fire Extinguishing Agents:** Dry chemical, alcohol foam, carbon dioxide
 4.4 **Fire Extinguishing Agents Not to Be Used:** Water may be ineffective.
 4.5 **Special Hazards of Combustion Products:** Toxic oxides of nitrogen may form in fire.
 4.6 **Behavior in Fire:** Currently not available
 4.7 **Auto Ignition Temperature:** 716°F
 4.8 **Electrical Hazards:** Currently not available
 4.9 **Burning Rate:** 7mm/min.
 4.10 **Adiabatic Flame Temperature:** Currently not available
 4.11 **Stoichiometric Air to Fuel Ratio:** 36.9 (calc.)
 4.12 **Flame Temperature:** Currently not available
 4.13 **Combustion Molar Ratio (Reactant to Product):** 10.5 (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:** Liquid will attack some forms of plastics.
 5.3 **Stability During Transport:** Stable
 5.4 **Neutralizing Agents for Acids and Caustics:** Flush with water
 5.5 **Polymerization:** Not pertinent
 5.6 **Inhibitor of Polymerization:** Not pertinent

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:** None
 6.5 **GESAMP Hazard Profile:**
 Bioaccumulation: 0
 Damage to living resources: 2
 Human Oral hazard: 2
 Human Contact hazard: II
 Reduction of amenities: XXX

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 99+%
 7.2 **Storage Temperature:** Ambient
 7.3 **Inert Atmosphere:** No requirement
 7.4 **Venting:** Open
 7.5 **IMO Pollution Category:** C
 7.6 **Ship Type:** 2
 7.7 **Barge Hull Type:** 2

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:** No
 8.5 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue)	2
Flammability (Red)	4
Instability (Yellow)	0

 8.6 **EPA Reportable Quantity:** 1000 pounds
 8.7 **EPA Pollution Category:** C
 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:** 73.14
 9.3 **Boiling Point at 1 atm:** 113°F = 45°C = 318°K
 9.4 **Freezing Point:** Not pertinent
 9.5 **Critical Temperature:** Currently not available
 9.6 **Critical Pressure:** Currently not available
 9.7 **Specific Gravity:** 0.696 at 20°C (liquid)
 9.8 **Liquid Surface Tension:** 19 dynes/cm = 0.019 N/m at 20°C
 9.9 **Liquid Water Interfacial Tension:** Not pertinent
 9.10 **Vapor (Gas) Specific Gravity:** 8.13
 9.11 **Ratio of Specific Heats of Vapor (Gas):** Currently not available
 9.12 **Latent Heat of Vaporization:** 167.0 Btu/lb = 92.8 cal/g = 3.88 X 10⁵ J/kg
 9.13 **Heat of Combustion:** -17,600 Btu/lb = -9,790 cal/g = -410 X 10⁵ J/kg
 9.14 **Heat of Decomposition:** Currently not available
 9.15 **Heat of Solution:** -170 Btu/lb = -96 cal/g = -4.0 X 10⁵ J/kg
 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:** 11 psia

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
52	44.000	76	0.621		N O T		N O T
54	43.930				P E R T I N E N T		P E R T I N E N T
56	43.860						
58	43.790						
60	43.720						
62	43.650						
64	43.580						
66	43.520						
68	43.450						
70	43.380						
72	43.310						
74	43.240						
76	43.170						
78	43.100						
80	43.030						
82	42.960						
84	42.890						
86	42.820						

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
	M	100	12.140	100	0.14770		N
	I	120	17.760	120	0.20880		O
	S	140	25.280	140	0.28720		T
	C	160	35.100	160	0.38600		P
	I	180	47.670	180	0.50780		E
	B	200	63.450	200	0.65530		R
	L	220	82.929	220	0.83140		T
	E	240	106.599	240	1.03800		I
		260	135.099	260	1.27900		N
		280	168.699	280	1.55400		E
		300	208.199	300	1.86700		N
		320	253.900	320	2.21900		T
		340	306.399	340	2.61100		
		360	366.199	360	3.04400		
		380	433.699	380	3.51900		
		400	509.299	400	4.03700		