

DIISOPROPYLAMINE

DIA

CAUTIONARY RESPONSE INFORMATION			
Common Synonyms	Liquid	Colorless	Fishy odor
Floats and mixes with water.			
Evacuate. Shut off ignition sources. Call fire department. KEEP PEOPLE AWAY. AVOID CONTACT WITH SOLID. Stay upwind. Use water spray to "knock down" vapor. Notify local health and pollution control agencies. Protect water intakes.			
Fire	FLAMMABLE. POISONOUS GASES MAY BE PRODUCED IN FIRE. Containers may explode in fire. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Wear goggles and self-contained breathing apparatus. Extinguish with dry chemicals, 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 coughing or difficult breathing. If in eyes, hold eyelids open and flush with plenty of water. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. LIQUID Will burn eyes. Irritating to eyes. If swallowed will cause nausea and vomiting. 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 and have victim induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.		
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. 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
Dilute and disperse Stop discharge	2.1 CG Compatibility Group: 7; Aliphatic amine 2.2 Formula: $[(CH_3)_2CH_2]_2NH$ or $C_6H_{15}N$ 2.3 IMO/UN Designation: 3.2/1158 2.4 DOT ID No.: 1158 2.5 CAS Registry No.: 108-18-9 2.6 NAERG Guide No.: 132 2.7 Standard Industrial Trade Classification: 51451
3. HEALTH HAZARDS	
3.1 Personal Protective Equipment: Air-supplied mask; plastic gloves; monogoggles; rubber apron 3.2 Symptoms Following Exposure: Inhalation of vapors causes irritation, sometimes with nausea and vomiting; can also cause burns to the respiratory system. Ingestion causes irritation of mouth and stomach. Vapor irritates eyes; liquid causes severe burn, like caustic. Contact with skin causes irritation. 3.3 Treatment of Exposure: INHALATION: move victim to fresh air and keep him quiet and comfortably warm; give oxygen if breathing is difficult; call a physician. INGESTION: induce vomiting by giving a large volume of warm salt water; consult a physician. EYES: immediately flush eyes with plenty of water for at least 15 min., then get medical care. SKIN: flush with water; remove contaminated clothing and wash skin; if there is any redness or evidence of burning, consult a physician. 3.4 TLV-TWA: 5 ppm 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 2; oral LD ₅₀ = 0.7 g/kg (rat) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Currently not available 3.10 Vapor (Gas) Irritant Characteristics: Vapors are moderately irritating such that personnel will not usually tolerate moderate or high concentrations. 3.11 Liquid or Solid Characteristics: Causes smarting of the skin and first-degree burns on short exposure; may cause second-degree burns on long exposure. 3.12 Odor Threshold: Currently not available 3.13 IDLH Value: 200 ppm 3.14 OSHA PEL-TWA: 5 ppm 3.15 OSHA PEL-STEL: Not listed. 3.16 OSHA PEL-Ceiling: Not listed. 3.17 EPA AEGL: Not listed	
NOTES	

4. FIRE HAZARDS	7. SHIPPING INFORMATION								
4.1 Flash Point: 20°F O.C. 35°F C. 4.2 Flammable Limits in Air: 0.8%-7.1% 4.3 Fire Extinguishing Agents: "Alcohol" foam, dry chemical, 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 fires. 4.6 Behavior in Fire: Vapor is heavier than air and may travel to a source of ignition and flash back. 4.7 Auto Ignition Temperature: 600°F 4.8 Electrical Hazards: Class I 4.9 Burning Rate: Currently not available 4.10 Adiabatic Flame Temperature: Currently not available 4.11 Stoichiometric Air to Fuel Ratio: 51.2 (calc.) 4.12 Flame Temperature: Currently not available 4.13 Combustion Molar Ratio (Reactant to Product): 14.5 (calc.) 4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed	7.1 Grades of Purity: commercial, 100% 7.2 Storage Temperature: Ambient 7.3 Inert Atmosphere: No requirement 7.4 Venting: Open (flame arrester) 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: Flammable liquid 8.2 49 CFR Class: 3 8.3 49 CFR Package Group: II 8.4 Marine Pollutant: No 8.5 NFPA Hazard Classification: <table border="0"> <tr> <td>Category</td> <td>Classification</td> </tr> <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> </table>		Category	Classification	Health Hazard (Blue).....	3	Flammability (Red).....	3	Instability (Yellow).....	0
Category	Classification								
Health Hazard (Blue).....	3								
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 FWCNA List: Not listed									
9. PHYSICAL & CHEMICAL PROPERTIES									
9.1 Physical State at 15°C and 1 atm: Liquid 9.2 Molecular Weight: 101.19 9.3 Boiling Point at 1 atm: 183.0°F = 83.9°C = 357.1°K 9.4 Freezing Point: -141.3°F = -96.3°C = 176.9°K 9.5 Critical Temperature: 480.2°F = 249.0°C = 522.2°K 9.6 Critical Pressure: (est.) 400 psia = 30 atm = 3 MN/m ² 9.7 Specific Gravity: 0.717 at 20°C (liquid) 9.8 Liquid Surface Tension: 19.64 dynes/cm = 0.01964 N/m at 20°C 9.9 Liquid Water Interfacial Tension: Not pertinent 9.10 Vapor (Gas) Specific Gravity: 3.5 9.11 Ratio of Specific Heats of Vapor (Gas): (est.) 1.064 9.12 Latent Heat of Vaporization: 121 Btu/lb = 67.5 cal/g = 2.82 X 10 ⁵ J/kg 9.13 Heat of Combustion: -19,800 Btu/lb = -11,000 cal/g = -460 X 10 ⁵ J/kg 9.14 Heat of Decomposition: Not pertinent 9.15 Heat of Solution: -140 Btu/lb = -76 cal/g = 3.2 X 10 ⁵ 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: 2.5 psia									

DIISOPROPYLAMINE

DIA

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
51	45.170	67	0.631	67	0.811	-50	1.134
52	45.150					-40	1.019
53	45.120					-30	0.920
54	45.100					-20	0.834
55	45.070					-10	0.760
56	45.050					0	0.695
57	45.020					10	0.639
58	45.000					20	0.588
59	44.980					30	0.544
60	44.950					40	0.505
61	44.930					50	0.469
62	44.900					60	0.438
63	44.880					70	0.410
64	44.850					80	0.384
65	44.830					90	0.361
66	44.810					100	0.340
67	44.780					110	0.321
68	44.760					120	0.304
69	44.730					130	0.288
70	44.710					140	0.273
71	44.680						
72	44.660						
73	44.640						
74	44.610						
75	44.590						
76	44.560						

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	70	1.222	70	0.02175	50	0.356
	I	75	1.394	75	0.02458	100	0.388
	S	80	1.567	80	0.02772	150	0.420
	C	85	1.802	85	0.03118	200	0.450
	I	90	2.041	90	0.03501	250	0.479
	B	95	2.307	95	0.03921	300	0.507
	L	100	2.602	100	0.04383	350	0.534
	E	105	2.928	105	0.04889	400	0.559
		110	3.289	110	0.05442	450	0.584
		115	3.686	115	0.06046	500	0.607
		120	4.123	120	0.06705	550	0.630
		125	4.603	125	0.07422	600	0.651
		130	5.130	130	0.08201	650	0.672
		135	5.706	135	0.09046	700	0.691
		140	6.336	140	0.09960	750	0.710
		145	7.023	145	0.10950	800	0.728
		150	7.772	150	0.12020	850	0.745
		155	8.586	155	0.13170	900	0.761
		160	9.470	160	0.14410	950	0.777
		165	10.430	165	0.15740	1000	0.791
		170	11.470	170	0.17170	1050	0.805
		175	12.590	175	0.18700	1100	0.819
		180	13.800	180	0.20340	1150	0.831
		185	15.110	185	0.22100		