

# LINEAR ALCOHOLS

LAL

CAUTIONARY RESPONSE INFORMATION				4. FIRE HAZARDS	7. SHIPPING INFORMATION
Common Synonyms Dodecanol Pentadecanol Tetradecanol Tridecanol	Solid or liquid Floats on water.	Colorless	Mild alcohol odor	<p><b>4.1 Flash Point:</b> 180°F-285°F O.C.</p> <p><b>4.2 Flammable Limits in Air:</b> Currently not available</p> <p><b>4.3 Fire Extinguishing Agents:</b> Alcohol foam, dry chemical, or carbon dioxide</p> <p><b>4.4 Fire Extinguishing Agents Not to Be Used:</b> Water or foam may cause frothing</p> <p><b>4.5 Special Hazards of Combustion Products:</b> Not pertinent</p> <p><b>4.6 Behavior in Fire:</b> Not pertinent</p> <p><b>4.7 Auto Ignition Temperature:</b> Currently not available</p> <p><b>4.8 Electrical Hazards:</b> Not pertinent</p> <p><b>4.9 Burning Rate:</b> Currently not available</p> <p><b>4.10 Adiabatic Flame Temperature:</b> Currently not available</p> <p><b>4.11 Stoichiometric Air to Fuel Ratio:</b> Not pertinent</p> <p><b>4.12 Flame Temperature:</b> Currently not available</p> <p><b>4.13 Combustion Molar Ratio (Reactant to Product):</b> Not pertinent.</p> <p><b>4.14 Minimum Oxygen Concentration for Combustion (MOCC):</b> Not listed</p>	<p><b>7.1 Grades of Purity:</b> Currently not available</p> <p><b>7.2 Storage Temperature:</b> Ambient</p> <p><b>7.3 Inert Atmosphere:</b> No requirement</p> <p><b>7.4 Venting:</b> Open (flame arrester)</p> <p><b>7.5 IMO Pollution Category:</b> Currently not available</p> <p><b>7.6 Ship Type:</b> Currently not available</p> <p><b>7.7 Barge Hull Type:</b> Currently not available</p>
<b>Fire</b>	Combustible. Extinguish with alcohol foam, dry chemical, or carbon dioxide. Cool exposed containers with water.				<b>8. HAZARD CLASSIFICATIONS</b>
<b>Exposure</b>	CALL FOR MEDICAL AID.  LIQUID Irritating to skin. Will burn eyes. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water.				<p><b>8.1 49 CFR Category:</b> Flammable liquid</p> <p><b>8.2 49 CFR Class:</b> 3</p> <p><b>8.3 49 CFR Package Group:</b> III</p> <p><b>8.4 Marine Pollutant:</b> No</p> <p><b>8.5 NFPA Hazard Classification:</b> Not listed</p> <p><b>8.6 EPA Reportable Quantity:</b> Not listed.</p> <p><b>8.7 EPA Pollution Category:</b> Not listed.</p> <p><b>8.8 RCRA Waste Number:</b> Not listed</p> <p><b>8.9 EPA FWPCA List:</b> Not listed</p>
<b>Water Pollution</b>	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.				<b>9. PHYSICAL &amp; CHEMICAL PROPERTIES</b>
<b>1. CORRECTIVE RESPONSE ACTIONS</b> Stop discharge Contain Collection Systems: Skim Clean shore line Salvage waterfowl	<b>2. CHEMICAL DESIGNATIONS</b> 2.1 CG Compatibility Group: Not listed. 2.2 Formula: <chem>CH3(CH2)10-11CH2OH</chem> 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: 1987 2.5 CAS Registry No.: Currently not available 2.6 NAERG Guide No.: 127 2.7 Standard Industrial Trade Classification: 51219			<b>5. CHEMICAL REACTIVITY</b> 5.1 Reactivity with Water: No reaction 5.2 Reactivity with Common Materials: No reaction 5.3 Stability During Transport: Stable 5.4 Neutralizing Agents for Acids and Caustics: Not pertinent 5.5 Polymerization: Not pertinent 5.6 Inhibitor of Polymerization: Not pertinent	<p><b>9.1 Physical State at 15°C and 1 atm:</b> Solid</p> <p><b>9.2 Molecular Weight:</b> &gt;186</p> <p><b>9.3 Boiling Point at 1 atm:</b> &gt;486°F = &gt;252°C = &gt;525°K</p> <p><b>9.4 Freezing Point:</b> &gt;66°F = &gt;19°C = &gt;292°K</p> <p><b>9.5 Critical Temperature:</b> Not pertinent</p> <p><b>9.6 Critical Pressure:</b> Not pertinent</p> <p><b>9.7 Specific Gravity:</b> 0.84 at 20°C (liquid)</p> <p><b>9.8 Liquid Surface Tension:</b> (est.) 30 dynes/cm = 0.03 N/m at 30°C</p> <p><b>9.9 Liquid Water Interfacial Tension:</b> (est.) 30 dynes/cm = 0.03 N/m at 30°C</p> <p><b>9.10 Vapor (Gas) Specific Gravity:</b> Not pertinent</p> <p><b>9.11 Ratio of Specific Heats of Vapor (Gas):</b> Not pertinent</p> <p><b>9.12 Latent Heat of Vaporization:</b> Not pertinent</p> <p><b>9.13 Heat of Combustion:</b> (est.) -18,500 Btu/lb = 10,300 cal/g = -429 X 10<sup>3</sup> J/kg</p> <p><b>9.14 Heat of Decomposition:</b> Not pertinent</p> <p><b>9.15 Heat of Solution:</b> Not pertinent</p> <p><b>9.16 Heat of Polymerization:</b> Not pertinent</p> <p><b>9.17 Heat of Fusion:</b> Currently not available</p> <p><b>9.18 Limiting Value:</b> Currently not available</p> <p><b>9.19 Reid Vapor Pressure:</b> Currently not available</p>
<b>3. HEALTH HAZARDS</b>  3.1 Personal Protective Equipment: Eye protection. 3.2 Symptoms Following Exposure: Direct contact can produce eye irritation. Low general toxicity. 3.3 Treatment of Exposure: Wash eyes with water for at least 15 min. 3.4 TLV-TWA: Not listed. 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 1; LD <sub>50</sub> = 5 to 15 g/kg (rat) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Currently not available 3.10 Vapor (Gas) Irritant Characteristics: None 3.11 Liquid or Solid Characteristics: No appreciable hazard. Practically harmless to skin. 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				<b>6. WATER POLLUTION</b> 6.1 Aquatic Toxicity: Currently not available 6.2 Waterfowl Toxicity: Currently not available 6.3 Biological Oxygen Demand (BOD): 29%, 1 day 6.4 Food Chain Concentration Potential: None 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	52.430	86	0.525	86	1.040	86	3.679
69	52.430	87	0.525	87	1.040	87	3.591
70	52.430	88	0.525	88	1.040	88	3.506
71	52.430	89	0.525	89	1.040	89	3.423
72	52.430	90	0.525	90	1.040	90	3.342
73	52.430	91	0.525	91	1.040	91	3.264
74	52.430	92	0.525	92	1.040	92	3.187
75	52.430	93	0.525	93	1.040	93	3.113
76	52.430	94	0.525	94	1.040	94	3.040
77	52.430	95	0.525	95	1.040	95	2.970
78	52.430	96	0.525	96	1.040	96	2.901
79	52.430	97	0.525	97	1.040	97	2.835
80	52.430	98	0.525	98	1.040	98	2.770
81	52.430	99	0.525	99	1.040	99	2.706
82	52.430	100	0.525	100	1.040	100	2.645
83	52.430	101	0.525	101	1.040	101	2.585
84	52.430	102	0.525	102	1.040	102	2.526
85	52.430	103	0.525	103	1.040	103	2.469

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
I	86	0.002	86	0.0006		N	
N	87	0.002	87	0.0006		O	
S	88	0.002	88	0.0006		T	
O	89	0.002	89	0.0007			
L	90	0.002	90	0.0007		P	
U	91	0.002	91	0.0007		E	
B	92	0.002	92	0.0007		R	
L	93	0.002	93	0.0008		T	
E	94	0.003	94	0.0008		I	
	95	0.003	95	0.0008		N	
	96	0.003	96	0.0008		E	
	97	0.003	97	0.0009		N	
	98	0.003	98	0.0009		E	
	99	0.003	99	0.0009		T	
	100	0.003	100	0.0010		I	
	101	0.003	101	0.0010		N	
	102	0.003	102	0.0010		E	
	103	0.003	103	0.0011		T	