

# OLEIC ACID

OLA

CAUTIONARY RESPONSE INFORMATION				4. FIRE HAZARDS	7. SHIPPING INFORMATION								
Common Synonyms cis-8-Heptadecylenecarboxylic acid cis-9-Octadecenoic acid Red oil	Liquid  Floats on water.	Colorless to pale yellow  Mild odor		<p><b>4.1 Flash Point:</b> 390–425°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> Dry chemical, 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> Currently not available</p> <p><b>4.6 Behavior in Fire:</b> Currently not available</p> <p><b>4.7 Auto Ignition Temperature:</b> 685°F</p> <p><b>4.8 Electrical Hazards:</b> Currently not available</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> 121.4 (calc.)</p> <p><b>4.12 Flame Temperature:</b> Currently not available</p> <p><b>4.13 Combustion Molar Ratio (Reactant to Product):</b> 35.0 (calc.)</p> <p><b>4.14 Minimum Oxygen Concentration for Combustion (MOCC):</b> Not listed</p>	<p><b>7.1 Grades of Purity:</b> Commercial, 79-83%</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> D</p> <p><b>7.6 Ship Type:</b> Data not available</p> <p><b>7.7 Barge Hull Type:</b> Currently not available</p>								
<b>Fire</b>	Combustible. Extinguish with dry chemicals or carbon dioxide. Water or foam may be ineffective on fire. Cool exposed containers with water.				<b>8. HAZARD CLASSIFICATIONS</b>								
<b>Exposure</b>	CALL FOR MEDICAL AID.  LIQUID Irritating to skin and eyes. If swallowed will cause nausea. Remove contaminated clothing and shoes. Flush affected area 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. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.				<p><b>8.1 49 CFR Category:</b> Not listed</p> <p><b>8.2 49 CFR Class:</b> Not pertinent</p> <p><b>8.3 49 CFR Package Group:</b> Not listed.</p> <p><b>8.4 Marine Pollutant:</b> No</p> <p><b>8.5 NFPA Hazard Classification:</b></p> <table> <thead> <tr> <th>Category</th> <th>Classification</th> </tr> </thead> <tbody> <tr> <td>Health Hazard (Blue).....</td> <td>0</td> </tr> <tr> <td>Flammability (Red).....</td> <td>1</td> </tr> <tr> <td>Instability (Yellow).....</td> <td>0</td> </tr> </tbody> </table> <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 FWCRA List:</b> Not listed</p>	Category	Classification	Health Hazard (Blue).....	0	Flammability (Red).....	1	Instability (Yellow).....	0
Category	Classification												
Health Hazard (Blue).....	0												
Flammability (Red).....	1												
Instability (Yellow).....	0												
<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 Chemical and Physical Treatment: Absorb Clean shore line Salvage waterfowl	<b>2. CHEMICAL DESIGNATIONS</b>			<p><b>9.1 Physical State at 15°C and 1 atm:</b> Liquid</p> <p><b>9.2 Molecular Weight:</b> 277 (avg.)</p> <p><b>9.3 Boiling Point at 1 atm:</b> 432°F = 222°C = 495°K</p> <p><b>9.4 Freezing Point:</b> 57°F = 14°C = 287°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> 0.89 at 25°C (liquid)</p> <p><b>9.8 Liquid Surface Tension:</b> 32.8 dynes/cm = 0.0328 N/m at 20°C</p> <p><b>9.9 Liquid Water Interfacial Tension:</b> 15.59 dynes/cm = 0.01559 N/m at 20°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> 103 Btu/lb = 57 cal/g = 2.4 X 10<sup>5</sup> J/kg</p> <p><b>9.13 Heat of Combustion:</b> Currently not available</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>					<b>NOTES</b>								
3.1 Personal Protective Equipment: Impervious gloves; goggles or face shield; impervious apron													
3.2 Symptoms Following Exposure: Industrial use of compound involves no known hazards. Ingestion causes mild irritation of mouth and stomach. Contact with eyes or skin causes mild irritation.													
3.3 Treatment of Exposure: INGESTION: give large amount of water. EYES: if eye irritation occurs, flush with water and get medical attention. SKIN: wash thoroughly 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 1; LD <sub>50</sub> >15 g/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: 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													

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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
60	56.000	60	0.486	80	1.553	70	37.070
62	55.950	61	0.488	90	1.543	75	33.530
64	55.900	62	0.491	100	1.533	80	30.380
66	55.850	63	0.493	110	1.523	85	27.580
68	55.810	64	0.495	120	1.513	90	25.080
70	55.760	65	0.498	130	1.503	95	22.850
72	55.710	66	0.500	140	1.493	100	20.850
74	55.660	67	0.503	150	1.483	105	19.050
76	55.610	68	0.505	160	1.473	110	17.440
78	55.560	69	0.507	170	1.463	115	15.990
80	55.510	70	0.510	180	1.453	120	14.680
82	55.470	71	0.512	190	1.443	125	13.500
84	55.420	72	0.514	200	1.433	130	12.430
86	55.370	73	0.517	210	1.423	135	11.460
88	55.320	74	0.519	220	1.413	140	10.580
90	55.270	75	0.522	230	1.403	145	9.785
92	55.220	76	0.524	240	1.393	150	9.058
94	55.170	77	0.526	250	1.383	155	8.396
96	55.130	78	0.529	260	1.373	160	7.792
98	55.080	79	0.531	270	1.363	165	7.240
100	55.030	80	0.534	280	1.353	170	6.735
102	54.980	81	0.536	290	1.343	175	6.272
104	54.930	82	0.538			180	5.848
		83	0.541			185	5.458
		84	0.543			190	5.100
		85	0.546			195	4.770

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 N S O L U B L E		N O T		N O T		N O T
			P E R T I N E T		P E R T I N E T		P E R T I N E T