

# CYCLOPENTENE

CPE

| CAUTIONARY RESPONSE INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |           | 4. FIRE HAZARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 7. SHIPPING INFORMATION                                                                                                                                                                                                                                                                                                                           |          |                |                      |   |                    |   |                      |   |
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| Common Synonyms<br>UN 2246 (DOT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Liquid         | Colorless | <p><b>4.1 Flash Point:</b> -30°F C.C.</p> <p><b>4.2 Flammable Limits in Air:</b> LEL 1.5%, upper explosive limit data not available.</p> <p><b>4.3 Fire Extinguishing Agents:</b> Carbon dioxide, dry chemical, foam.</p> <p><b>4.4 Fire Extinguishing Agents Not to Be Used:</b> Water may be ineffective.</p> <p><b>4.5 Special Hazards of Combustion Products:</b> Vapor may travel considerable distance to a source of ignition and flashback. Explosion may occur under fire condition.</p> <p><b>4.6 Behavior in Fire:</b> Currently not available</p> <p><b>4.7 Auto Ignition Temperature:</b> Currently not available</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> 33.3 (calc.)</p> <p><b>4.12 Flame Temperature:</b> Currently not available</p> <p><b>4.13 Combustion Molar Ratio (Reactant to Product):</b> 9.0 (calc.)</p> <p><b>4.14 Minimum Oxygen Concentration for Combustion (MOCC):</b> Not listed</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p><b>7.1 Grades of Purity:</b> 99%</p> <p><b>7.2 Storage Temperature:</b> Refrigerate</p> <p><b>7.3 Inert Atmosphere:</b> Currently not available</p> <p><b>7.4 Venting:</b> Currently not available</p> <p><b>7.5 IMO Pollution Category:</b> (B)</p> <p><b>7.6 Ship Type:</b> 3</p> <p><b>7.7 Barge Hull Type:</b> Currently not available</p> |          |                |                      |   |                    |   |                      |   |
| <p>Keep people away.<br/>Shut off ignition sources and call fire department.<br/>Evacuate area.<br/>Avoid contact with liquid and vapor.<br/>Wear self-contained breathing apparatus and protective clothing.<br/>Stay upwind and use water spray to "knock down" vapor.<br/>Notify local health and pollution control agencies.<br/>Protect water intakes.</p>                                                                                                                                                                             |                |           | <p><b>8. HAZARD CLASSIFICATIONS</b></p> <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></p> <table> <thead> <tr> <th>Category</th> <th>Classification</th> </tr> </thead> <tbody> <tr> <td>Health Hazard (Blue)</td> <td>1</td> </tr> <tr> <td>Flammability (Red)</td> <td>3</td> </tr> <tr> <td>Instability (Yellow)</td> <td>1</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 FWC List:</b> Not listed</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                   | Category | Classification | Health Hazard (Blue) | 1 | Flammability (Red) | 3 | Instability (Yellow) | 1 |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Classification |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                   |          |                |                      |   |                    |   |                      |   |
| Health Hazard (Blue)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                   |          |                |                      |   |                    |   |                      |   |
| Flammability (Red)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 3              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                   |          |                |                      |   |                    |   |                      |   |
| Instability (Yellow)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                   |          |                |                      |   |                    |   |                      |   |
| <p><b>Fire</b><br/>FLAMMABLE.<br/>Flashback along vapor trail may occur.<br/>Vapor may explode if ignited in an enclosed area.<br/>Water may be ineffective on fire.<br/>Extinguish with dry chemical, foam, or carbon dioxide.<br/>Cool exposed containers with water.</p>                                                                                                                                                                                                                                                                 |                |           | <p><b>9. PHYSICAL &amp; CHEMICAL PROPERTIES</b></p> <p><b>9.1 Physical State at 15°C and 1 atm:</b> Liquid</p> <p><b>9.2 Molecular Weight:</b> 68.12</p> <p><b>9.3 Boiling Point at 1 atm:</b> 112°F = 44°C = 317.2°K</p> <p><b>9.4 Freezing Point:</b> -211°F = -135°C = 138.2°K</p> <p><b>9.5 Critical Temperature:</b> Currently not available</p> <p><b>9.6 Critical Pressure:</b> Currently not available</p> <p><b>9.7 Specific Gravity:</b> 0.774</p> <p><b>9.8 Liquid Surface Tension:</b> Currently not available</p> <p><b>9.9 Liquid Water Interfacial Tension:</b> Currently not available</p> <p><b>9.10 Vapor (Gas) Specific Gravity:</b> 2.35</p> <p><b>9.11 Ratio of Specific Heats of Vapor (Gas):</b> Currently not available</p> <p><b>9.12 Latent Heat of Vaporization:</b> Currently not available</p> <p><b>9.13 Heat of Combustion:</b> Currently not available</p> <p><b>9.14 Heat of Decomposition:</b> Currently not available</p> <p><b>9.15 Heat of Solution:</b> Currently not available</p> <p><b>9.16 Heat of Polymerization:</b> Currently not available</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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                   |          |                |                      |   |                    |   |                      |   |
| <p><b>Exposure</b><br/>CALL FOR MEDICAL AID.</p> <p><b>VAPOR</b><br/>If inhaled, will cause dizziness, difficult breathing, or loss of consciousness.<br/>Move to fresh air.<br/>If breathing has stopped, give artificial respiration.<br/>If breathing is difficult, give oxygen.</p> <p><b>LIQUID</b><br/>Irritating to skin and eyes.<br/>Harmful if swallowed.<br/>Remove contaminated clothing and shoes.<br/>Flush affected areas with plenty of water.<br/><b>IF IN EYES:</b> hold eyelids open and flush with plenty of water.</p> |                |           | <p><b>5. CHEMICAL REACTIVITY</b></p> <p><b>5.1 Reactivity with Water:</b> No reaction.</p> <p><b>5.2 Reactivity with Common Materials:</b> No reaction.</p> <p><b>5.3 Stability During Transport:</b> Stable.</p> <p><b>5.4 Neutralizing Agents for Acids and Caustics:</b> Not pertinent.</p> <p><b>5.5 Polymerization:</b> Currently not available</p> <p><b>5.6 Inhibitor of Polymerization:</b> Currently not available</p> <p><b>6. WATER POLLUTION</b></p> <p><b>6.1 Aquatic Toxicity:</b> Currently not available</p> <p><b>6.2 Waterfowl Toxicity:</b> Currently not available</p> <p><b>6.3 Biological Oxygen Demand (BOD):</b> Currently not available</p> <p><b>6.4 Food Chain Concentration Potential:</b> Currently not available</p> <p><b>6.5 GESAMP Hazard Profile:</b></p> <ul style="list-style-type: none"> <li>Bioaccumulation: 0</li> <li>Damage to living resources: (3)</li> <li>Human Oral hazard: 1</li> <li>Human Contact hazard: 0</li> <li>Reduction of amenities: 0</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                   |          |                |                      |   |                    |   |                      |   |
| <p><b>Water Pollution</b><br/>Effect of low concentrations on aquatic life is unknown.<br/>Fouling to shoreline.<br/>May be dangerous if it enters water intakes.<br/>Notify local health and wildlife officials.<br/>Notify operators of nearby water intakes.</p>                                                                                                                                                                                                                                                                         |                |           | <p><b>NOTES</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                   |          |                |                      |   |                    |   |                      |   |
| <p><b>1. CORRECTIVE RESPONSE ACTIONS</b></p> <p>Stop discharge<br/>Dilute and disperse<br/>Contain<br/>Collection Systems: Skim<br/>Chemical and Physical Treatment: Burn<br/>Clean shoreline<br/>Salvage waterfowl</p>                                                                                                                                                                                                                                                                                                                     |                |           | <p><b>2. CHEMICAL DESIGNATIONS</b></p> <p>2.1 CG Compatibility Group: 30; Olefins<br/>2.2 Formula: C<sub>5</sub>H<sub>8</sub><br/>2.3 IMO/UN Designation: 3.1/2246<br/>2.4 DOT ID No.: 2246<br/>2.5 CAS Registry No.: 142-29-0<br/>2.6 NAERG Guide No.: 128<br/>2.7 Standard Industrial Trade Classification: 51129</p> <p><b>3. HEALTH HAZARDS</b></p> <p>3.1 Personal Protective Equipment: Self-contained breathing apparatus and protective clothing.</p> <p>3.2 Symptoms Following Exposure: May be harmful by inhalation, ingestion, or skin absorption. May cause eye and skin irritation.</p> <p>3.3 Treatment of Exposure: INHALATION: Call a physician. If inhaled, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. EYES: Separate eyelids with finger. Flush with copious amounts of water for at least 15 minutes. SKIN: Flush with water.</p> <p>3.4 TLV-TWA: Not listed.</p> <p>3.5 TLV-STEL: Not listed.</p> <p>3.6 TLV-Ceiling: Not listed.</p> <p>3.7 Toxicity by Ingestion: Grade 2; LD<sub>50</sub> = 1.656 g/kg (rat)</p> <p>3.8 Toxicity by Inhalation: Currently not available.</p> <p>3.9 Chronic Toxicity: Currently not available.</p> <p>3.10 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.</p> <p>3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of skin.</p> <p>3.12 Odor Threshold: Currently not available</p> <p>3.13 IDLH Value: Not listed.</p> <p>3.14 OSHA PEL-TWA: Not listed.</p> <p>3.15 OSHA PEL-STEL: Not listed.</p> <p>3.16 OSHA PEL-Ceiling: Not listed.</p> <p>3.17 EPA AEGL: Not listed</p> |                                                                                                                                                                                                                                                                                                                                                   |          |                |                      |   |                    |   |                      |   |

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| 9.20<br>SATURATED LIQUID DENSITY |                       | 9.21<br>LIQUID HEAT CAPACITY |                                     | 9.22<br>LIQUID THERMAL CONDUCTIVITY |                                                     | 9.23<br>LIQUID VISCOSITY   |                               |
|----------------------------------|-----------------------|------------------------------|-------------------------------------|-------------------------------------|-----------------------------------------------------|----------------------------|-------------------------------|
| Temperature<br>(degrees F)       | Pounds per cubic foot | Temperature<br>(degrees F)   | British thermal unit per<br>pound-F | Temperature<br>(degrees F)          | British thermal unit inch<br>per hour-square foot-F | Temperature<br>(degrees F) | Centipoise                    |
| CURRENTLY<br>NOT<br>AVAILABLE    |                       |                              | CURRENTLY<br>NOT<br>AVAILABLE       |                                     | CURRENTLY<br>NOT<br>AVAILABLE                       |                            | CURRENTLY<br>NOT<br>AVAILABLE |

| 9.24<br>SOLUBILITY IN WATER |                                   | 9.25<br>SATURATED VAPOR PRESSURE |                               | 9.26<br>SATURATED VAPOR DENSITY |                               | 9.27<br>IDEAL GAS HEAT CAPACITY                                                                                                                                        |                                                                                                                                                                                                                               |
|-----------------------------|-----------------------------------|----------------------------------|-------------------------------|---------------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature<br>(degrees F)  | Pounds per 100 pounds<br>of water | Temperature<br>(degrees F)       | Pounds per square inch        | Temperature<br>(degrees F)      | Pounds per cubic foot         | Temperature<br>(degrees F)                                                                                                                                             | British thermal unit per<br>pound-F                                                                                                                                                                                           |
| INSOLUBLE                   |                                   |                                  | CURRENTLY<br>NOT<br>AVAILABLE |                                 | CURRENTLY<br>NOT<br>AVAILABLE | 0<br>25<br>50<br>75<br>100<br>125<br>150<br>175<br>200<br>225<br>250<br>275<br>300<br>325<br>350<br>375<br>400<br>425<br>450<br>475<br>500<br>525<br>550<br>575<br>600 | 0.199<br>0.214<br>0.228<br>0.243<br>0.256<br>0.270<br>0.283<br>0.297<br>0.309<br>0.322<br>0.334<br>0.346<br>0.358<br>0.369<br>0.381<br>0.392<br>0.402<br>0.413<br>0.423<br>0.433<br>0.443<br>0.453<br>0.462<br>0.471<br>0.480 |