

1-TRIDECENE

TDC

CAUTIONARY RESPONSE INFORMATION

| | |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Common Synonyms Undecylethylene | Watery liquid Colorless Mild pleasant odor |
| Floats on water. | |
| Call fire department. Notify local health and pollution control agencies. | |
| Fire | Combustible. Extinguish with dry chemical, foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water. |
| Exposure | LIQUID Irritating to eyes. IF IN EYES, hold eyelids open and flush with plenty of water. |
| Water Pollution | 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. |

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| 1. CORRECTIVE RESPONSE ACTIONS Stop discharge Contain Collection Systems: Skim Chemical and Physical Treatment: Absorb Clean shore line Salvage waterfowl | 2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: 30; Olefin 2.2 Formula: CH ₂ (CH ₂) ₁₀ CH=CH ₂ 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: Not listed 2.5 CAS Registry No.: Currently not available 2.6 NAERG Guide No.: Not listed 2.7 Standard Industrial Trade Classification: 51119 |
| 3. HEALTH HAZARDS 3.1 Personal Protective Equipment: Goggles or face shield. 3.2 Symptoms Following Exposure: Liquid may irritate eyes. 3.3 Treatment of Exposure: EYES: flush with water for 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: Currently not available 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Currently not available 3.10 Vapor (Gas) Irritant Characteristics: Non-volatile 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:**
175°F (approx.)
- 4.2 **Flammable Limits in Air:** Currently not available
- 4.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Water may be ineffective.
- 4.5 **Special Hazards of Combustion Products:** Not pertinent
- 4.6 **Behavior in Fire:** Not pertinent
- 4.7 **Auto Ignition Temperature:** Currently not available
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** Currently not available
- 4.10 **Adiabatic Flame Temperature:** Currently not available
- 4.11 **Stoichiometric Air to Fuel Ratio:** 92.8 (calc.)
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** 26.0 (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:** 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

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:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Technical: 95%
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Open (flame arrester)
- 7.5 **IMO Pollution Category:** Currently not available
- 7.6 **Ship Type:** Currently not available
- 7.7 **Barge Hull Type:** Currently not available

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:** Not listed
- 8.6 **EPA Reportable Quantity:** Not listed.
- 8.7 **EPA Pollution Category:** Not listed.
- 8.8 **RCRA Waste Number:** Not listed
- 8.9 **EPA FWPCA List:** Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
- 9.2 **Molecular Weight:** 182.35
- 9.3 **Boiling Point at 1 atm:** 451°F = 233°C = 506°K
- 9.4 **Freezing Point:** -11°F = -24°C = 249°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 0.765 at 20°C (liquid)
- 9.8 **Liquid Surface Tension:** 24.5 dynes/cm = 0.0245 N/m at 20°C
- 9.9 **Liquid Water Interfacial Tension:** Currently not available
- 9.10 **Vapor (Gas) Specific Gravity:** Not pertinent
- 9.11 **Ratio of Specific Heats of Vapor (Gas):**
1.029
- 9.12 **Latent Heat of Vaporization:** 110 Btu/lb = 59 cal/g = 2.5 X 10⁵ J/kg
- 9.13 **Heat of Combustion:** -19,048 Btu/lb = -10,582 cal/g = -443.05 X 10⁵ J/kg
- 9.14 **Heat of Decomposition:** Not pertinent
- 9.15 **Heat of Solution:** Not pertinent
- 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:** Low

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 |
| 35 | 48.620 | 35 | 0.499 | 32 | 1.040 | 15 | 3.203 |
| 40 | 48.500 | 40 | 0.499 | 34 | 1.040 | 20 | 2.988 |
| 45 | 48.370 | 45 | 0.499 | 36 | 1.040 | 25 | 2.791 |
| 50 | 48.250 | 50 | 0.499 | 38 | 1.040 | 30 | 2.611 |
| 55 | 48.130 | 55 | 0.499 | 40 | 1.040 | 35 | 2.446 |
| 60 | 48.010 | 60 | 0.499 | 42 | 1.040 | 40 | 2.294 |
| 65 | 47.890 | 65 | 0.499 | 44 | 1.040 | 45 | 2.154 |
| 70 | 47.770 | 70 | 0.499 | 46 | 1.040 | 50 | 2.026 |
| 75 | 47.650 | 75 | 0.499 | 48 | 1.040 | 55 | 1.907 |
| 80 | 47.520 | 80 | 0.499 | 50 | 1.040 | 60 | 1.797 |
| 85 | 47.400 | 85 | 0.499 | 52 | 1.040 | 65 | 1.696 |
| 90 | 47.280 | 90 | 0.499 | 54 | 1.040 | 70 | 1.602 |
| 95 | 47.160 | 95 | 0.499 | 56 | 1.040 | 75 | 1.515 |
| 100 | 47.040 | 100 | 0.499 | 58 | 1.040 | 80 | 1.434 |
| | | 105 | 0.499 | 60 | 1.040 | 85 | 1.359 |
| | | 110 | 0.499 | 62 | 1.040 | | |
| | | 115 | 0.499 | 64 | 1.040 | | |
| | | 120 | 0.499 | 66 | 1.040 | | |
| | | | | 68 | 1.040 | | |
| | | | | 70 | 1.040 | | |
| | | | | 72 | 1.040 | | |
| | | | | 74 | 1.040 | | |
| | | | | 76 | 1.040 | | |
| | | | | 78 | 1.040 | | |
| | | | | 80 | 1.040 | | |

| 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 | 130 | 0.009 | 130 | 0.00027 | 0 | 0.347 |
| | N | 140 | 0.014 | 140 | 0.00040 | 25 | 0.360 |
| | S | 150 | 0.020 | 150 | 0.00057 | 50 | 0.374 |
| | O | 160 | 0.029 | 160 | 0.00080 | 75 | 0.387 |
| | L | 170 | 0.042 | 170 | 0.00112 | 100 | 0.401 |
| | U | 180 | 0.058 | 180 | 0.00154 | 125 | 0.414 |
| | B | 190 | 0.079 | 190 | 0.00206 | 150 | 0.428 |
| | L | 200 | 0.108 | 200 | 0.00277 | 175 | 0.441 |
| | E | 210 | 0.144 | 210 | 0.00366 | 200 | 0.454 |
| | | 220 | 0.191 | 220 | 0.00477 | 225 | 0.467 |
| | | 230 | 0.250 | 230 | 0.00615 | 250 | 0.480 |
| | | 240 | 0.324 | 240 | 0.00786 | 275 | 0.493 |
| | | 250 | 0.415 | 250 | 0.00994 | 300 | 0.505 |
| | | 260 | 0.528 | 260 | 0.01246 | 325 | 0.518 |
| | | 270 | 0.665 | 270 | 0.01548 | 350 | 0.531 |
| | | 280 | 0.831 | 280 | 0.01909 | 375 | 0.543 |
| | | 290 | 1.031 | 290 | 0.02336 | 400 | 0.556 |
| | | 300 | 1.269 | 300 | 0.02837 | 425 | 0.568 |
| | | | | | | 450 | 0.580 |
| | | | | | | 475 | 0.592 |
| | | | | | | 500 | 0.605 |
| | | | | | | 525 | 0.617 |
| | | | | | | 550 | 0.628 |
| | | | | | | 575 | 0.640 |
| | | | | | | 600 | 0.652 |