**ETHYLIDENE NORBORNENE**

**4. FIRE HAZARDS**

- Flash Point: 98°F O.C.
- Flammable Limits in Air: Currently not available
- Fire Extinguishing Agents: Dry chemical, foam, carbon dioxide
- Fire Extinguishing Agents Not to Be Used: Water may be ineffective
- Special Hazards of Combustion Products: Currently not available
- Behavior in Fire: Currently not available
- Auto Ignition Temperature: Currently not available
- Adiabatic Flame Temperature: Currently not available
- Stoichiometric Air to Fuel Ratio: 57.1 (calc.)
- Flame Temperature: Currently not available
- Combustion Molar Ratio (Reactant to Product): 15.0 (calc.)
- Minimum Oxygen Concentration for Combustion (MOCC): Not listed

**5. CHEMICAL REACTIVITY**

- Reactivity with Water: No reaction
- Reactivity with Common Materials: Currently not available
- Stability During Transport: Stable
- Neutralizing Agents for Acids and Alkalis: Not pertinent
- Polymerization: Currently not available
- Inhibitor of Polymerization: Currently not available

**6. WATER POLLUTION**

- Aquatic Toxicity: Currently not available
- Waterfowl Toxicity: Currently not available
- Biological Oxygen Demand (BOD): Currently not available
- Food Chain Concentration Potential: Not pertinent
- GesAMP Hazard Profile: Not listed

**7. SHIPPING INFORMATION**

- Grades of Purity: Commercial, 99+%
- Storage Temperature: Ambient
- Inert Atmosphere: No requirement
- Venting: Open (flame arrestor)
- IMO Pollution Category: B
- Ship Type: 3
- Barge Hull Type: 2

**8. HAZARD CLASSIFICATIONS**

- CFR Classification: Not listed
- CFR Package Group: Not listed
- Marine Pollutant: No
- NFPA Hazard Classification: Not listed
- EPA Reportable Quantity: Not listed
- EPA Pollution Category: Not listed
- RCRA Waste Number: Not listed
- EPA FWPCA List: Not listed

**9. PHYSICAL & CHEMICAL PROPERTIES**

- Physical State at 15°C and 1 atm: Liquid
- Molecular Weight: 130.2
- Boiling Point at 1 atm: 297.7°F = 147.6°C = 425.8 K
- Freezing Point: -112°F = -80°C = 193 K
- Critical Temperature: Not pertinent
- Critical Pressure: Not pertinent
- Specific Gravity: 0.896 at 20°C (Liquid)
- Liquid Surface Tension: Currently not available
- Liquid Water Interface Tension: Currently not available
- Vapor (Gas) Specific Gravity: 4.1
- Ratio of Specific Heats of Vapor (Gas): Not pertinent
- Latent Heat of Vaporization: Currently not available
- Heat of Combustion (net): -18,000 Btu/lb or -10,450 cal/g = -437 X 10^6 J/kg
- Heat of Decomposition: Not pertinent
- Heat of Solution: Not pertinent
- Heat of Polymerization: Currently not available
- Heat of Fusion: Currently not available
- Limiting Value: Currently not available
- Reid Vapor Pressure: 0.23 psi

**NOTES**

**3. HEALTH HAZARDS**

- Personal Protective Equipment: Organic carbox or air-supplied mask; goggles or face shield; rubber gloves.
- Symptoms Following Exposure: Inhalation of vapors causes headache, confusion, and respiratory distress. Inhalation causes irritation of entire digestive system. Aspiration causes severe pneumonia. Contact with liquid causes irritation of eyes and skin.
- Treatment of Exposure: NAVALATION: remove victim to fresh air; administer artificial respira- tion and oxygen if required; call a doctor. INGESTION: give large amount of water and induce vomiting; get medical attention at once. EYES: flush with water for at least 15 min. SKIN: wipe off, wash with soap and water.
- Flash Point: 98°F O.C.
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**1. CORRECTIVE RESPONSE ACTIONS**

**Fire**
- Combustible: Extinguish with dry chemicals, alcohol foam, or carbon dioxide. Water may be ineffective on fire.
- Absorb: Protect water intakes.

**Exposure**
- CALL FOR MEDICAL AID.
- VAPOR: Irritating to skin and eyes. If inhaled will cause headache, 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: POISONOUS IF SWALLOWED. Irritating to skin and eyes. If swallowed will cause nausea and vomiting. Remove contaminated clothing and shoes. Flushing 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**
- Effect of low concentrations on aquatic life is unknown.
- Fouling to shoreline: Notify operators of nearby water intakes.

**2. CHEMICAL DESIGNATIONS**

- CG Compatibility Group: Not listed
- Formula: C₉H₁₂
- IMUS Designation: Not listed
- DOT ID No.: Not listed
- CAS Registry No.: 5219-75-3
- NAERG Guide No.: Not listed
- Standard Industrial Trade Classification: 51129

**3. CHEMICAL REACTIVITY**

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JUNE 1999