

MALEIC HYDRAZIDE

MLH

| CAUTIONARY RESPONSE INFORMATION | | | | 4. FIRE HAZARDS | 7. SHIPPING INFORMATION |
|---|-------|-------|----------|--|---|
| Common Synonyms 1,2-Dihydro-3,6-pyridazinedione 6-Hydroxy-3-(2h)-pyridazinone Malazide Maleic acid hydrazide Regulox | Solid | White | Odorless | <p>4.1 Flash Point: Not pertinent (combustible solid)</p> <p>4.2 Flammable Limits in Air: Not pertinent</p> <p>4.3 Fire Extinguishing Agents: Water, dry chemical, foam, carbon dioxide</p> <p>4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent</p> <p>4.5 Special Hazards of Combustion Products: Toxic nitrogen oxides are produced.</p> <p>4.6 Behavior in Fire: Not pertinent</p> <p>4.7 Auto Ignition Temperature: Not pertinent</p> <p>4.8 Electrical Hazards: Not pertinent</p> <p>4.9 Burning Rate: Not pertinent</p> <p>4.10 Adiabatic Flame Temperature: Currently not available</p> <p>4.11 Stoichiometric Air to Fuel Ratio: 28.6 (calc.)</p> <p>4.12 Flame Temperature: Currently not available</p> <p>4.13 Combustion Molar Ratio (Reactant to Product): 7.0 (calc.)</p> <p>4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed</p> | <p>7.1 Grades of Purity: Technical: 97+%</p> <p>7.2 Storage Temperature: Ambient</p> <p>7.3 Inert Atmosphere: No requirement</p> <p>7.4 Venting: Open</p> <p>7.5 IMO Pollution Category: Currently not available</p> <p>7.6 Ship Type: Currently not available</p> <p>7.7 Barge Hull Type: Currently not available</p> |
| Keep people away. Call fire department. Notify local health and pollution control agencies. | | | | <p>8. HAZARD CLASSIFICATIONS</p> <p>8.1 49 CFR Category: Not listed</p> <p>8.2 49 CFR Class: Not pertinent</p> <p>8.3 49 CFR Package Group: Not listed</p> <p>8.4 Marine Pollutant: No</p> <p>8.5 NFPA Hazard Classification: Not listed</p> <p>8.6 EPA Reportable Quantity: 5000 pounds</p> <p>8.7 EPA Pollution Category: D</p> <p>8.8 RCRA Waste Number: U148</p> <p>8.9 EPA FWPCA List: Not listed</p> | |
| Fire Combustible. POISONOUS GASES MAY BE PRODUCED IN FIRE. Extinguish with water, dry chemicals, foam, or carbon dioxide. | | | | <p>9. PHYSICAL & CHEMICAL PROPERTIES</p> <p>9.1 Physical State at 15°C and 1 atm: Solid</p> <p>9.2 Molecular Weight: 112.1</p> <p>9.3 Boiling Point at 1 atm: Not pertinent (decomposes)</p> <p>9.4 Freezing Point: 558°F = 292°C = 565°K</p> <p>9.5 Critical Temperature: Not pertinent</p> <p>9.6 Critical Pressure: Not pertinent</p> <p>9.7 Specific Gravity: 1.60 at 25°C (solid)</p> <p>9.8 Liquid Surface Tension: Not pertinent</p> <p>9.9 Liquid Water Interfacial Tension: Not pertinent</p> | |
| Exposure Call for medical aid. DUST Irritating to eyes, nose and throat. Move victim to fresh air. If in eyes, hold eyelids open and flush with plenty of water. If breathing is difficult, give oxygen. SOLID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush 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. | | | | <p>5. CHEMICAL REACTIVITY</p> <p>5.1 Reactivity with Water: No reaction</p> <p>5.2 Reactivity with Common Materials: No reaction</p> <p>5.3 Stability During Transport: Stable</p> <p>5.4 Neutralizing Agents for Acids and Caustics: Not pertinent</p> <p>5.5 Polymerization: Not pertinent</p> <p>5.6 Inhibitor of Polymerization: Not pertinent</p> | |
| Water Pollution Effect of low concentrations on aquatic life is unknown. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes. | | | | <p>6. WATER POLLUTION</p> <p>6.1 Aquatic Toxicity: Currently not available</p> <p>6.2 Waterfowl Toxicity: Currently not available</p> <p>6.3 Biological Oxygen Demand (BOD): Currently not available</p> <p>6.4 Food Chain Concentration Potential: None</p> <p>6.5 GESAMP Hazard Profile: Not listed</p> | |
| <p>1. CORRECTIVE RESPONSE ACTIONS</p> <p>Stop discharge Contain Collection Systems: Skim; Dredge</p> <p>2. CHEMICAL DESIGNATIONS</p> <p>2.1 CG Compatibility Group: Not listed. 2.2 Formula: C₄H₄N₂O₂ 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: Not listed 2.5 CAS Registry No.: 123-33-1 2.6 NAERG Guide No.: Not listed 2.7 Standard Industrial Trade Classification: 51577</p> <p>3. HEALTH HAZARDS</p> <p>3.1 Personal Protective Equipment: Goggles or face shield; dust mask.</p> <p>3.2 Symptoms Following Exposure: Inhalation of dust causes irritation of nose and throat. Contact with eyes or skin causes irritation. Ingestion has been observed to cause tremors and muscle spasms in test animals.</p> <p>3.3 Treatment of Exposure: INHALATION: move to fresh air. EYES: flush with water for at least 15 min. SKIN: flush with water, wash with soap and water. INGESTION: get medical attention.</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; oral LD₅₀ = 3,800 mg/kg (rat)</p> <p>3.8 Toxicity by Inhalation: Currently not available.</p> <p>3.9 Chronic Toxicity: Causes cancer in rats</p> <p>3.10 Vapor (Gas) Irritancy Characteristics: Currently not available</p> <p>3.11 Liquid or Solid Characteristics: Currently not available</p> <p>3.12 Odor Threshold: Odorless</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> | | | | <p>9.10 Vapor (Gas) Specific Gravity: Not pertinent</p> <p>9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent</p> <p>9.12 Latent Heat of Vaporization: Not pertinent</p> <p>9.13 Heat of Combustion: (est.) -8,200 Btu/lb = -4,500 cal/g = -190 X 10³ J/kg</p> <p>9.14 Heat of Decomposition: Not pertinent</p> <p>9.15 Heat of Solution: Not pertinent</p> <p>9.16 Heat of Polymerization: Not pertinent</p> <p>9.17 Heat of Fusion: Currently not available</p> <p>9.18 Limiting Value: Currently not available</p> <p>9.19 Reid Vapor Pressure: Currently not available</p> | |
| 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 |
| NOT PERTINENT | | | NOT PERTINENT | | NOT PERTINENT | | NOT PERTINENT |

| 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 |
| 77 | 0.600 | | NOT PERTINENT | | NOT PERTINENT | | NOT PERTINENT |