

HYDROQUINONE

HDQ

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Solid White, light tan to gray
1,4-Benzenediol p-Dihydroxybenzene Hydroquinol Pyrogenitic acid Quinol	Sinks and mixes with water.
<p style="color: red; font-size: small;">Keep people away. Avoid contact with solid and dust. Wear chemical protective suit with self-contained breathing apparatus. Shut off ignition sources. Call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	Combustible. Dust cloud may explode if ignited in an enclosed area. Extinguish with water, dry chemicals, foam, or carbon dioxide.
Exposure	CALL FOR MEDICAL AID. DUST Irritating to eyes, nose and throat. Harmful if inhaled. 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. SOLID Will burn eyes. Irritating to eyes. If swallowed will cause headache, dizziness, nausea, vomiting, or loss of consciousness. 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 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. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
Stop discharge

2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: Not listed.
- 2.2 Formula: 1, 4-C₆H₄(OH)₂
- 2.3 IMO/UN Designation: Not listed
- 2.4 DOT ID No.: 2662
- 2.5 CAS Registry No.: 123-31-9
- 2.6 NAERG Guide No.: 153
- 2.7 Standard Industrial Trade Classification: 51243

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Goggles; respiratory protection if dust is present
- 3.2 **Symptoms Following Exposure:** Ingestion can cause ringing in the ears, nausea, dizziness, a sense of suffocation, increased respiration rate, vomiting, pallor, muscular twitchings, headache, dyspnea, cyanosis, delirium, and collapse; the urine is green or brownish-green. Lethal adult dose is 2 grams. Direct contamination of the eye with particles of hydroquinone can cause immediate irritation and may result in ulceration of the cornea. Contact with skin may cause dermatitis.
- 3.3 **Treatment of Exposure:** INGESTION: induce vomiting; perform gastric lavage, and follow with a saline cathartic and demulcents; get medical attention. EYES: flush immediately with plenty of water for 15 min. and get medical attention. SKIN: wash with soap and water.
- 3.4 TLV-TWA: 2 mg/m³
- 3.5 TLV-STEL: Not listed.
- 3.6 TLV-Ceiling: Not listed.
- 3.7 **Toxicity by Ingestion:** Grade 3; LD₅₀ = 370 mg/kg (rat)
- 3.8 **Toxicity by Inhalation:** Currently not available.
- 3.9 **Chronic Toxicity:** Causes bladder cancer in mice, discoloration of eyelids and eye changes in men
- 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: 50 mg/m³
- 3.14 OSHA PEL-TWA: 2 mg/m³
- 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:** (molten) 350°F O.C.
- 4.2 **Flammable Limits in Air:** Not pertinent
- 4.3 **Fire Extinguishing Agents:** Water, foam, dry chemical, carbon dioxide
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Currently not available
- 4.5 **Special Hazards of Combustion Products:** Currently not available
- 4.6 **Behavior in Fire:** Dust explosion is possible.
- 4.7 **Auto Ignition Temperature:** 960°F
- 4.8 **Electrical Hazards:** Currently not available
- 4.9 **Burning Rate:** Not pertinent
- 4.10 **Adiabatic Flame Temperature:** Currently not available
- 4.11 **Stoichiometric Air to Fuel Ratio:** 30.9 (calc.)
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** 9.0 (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:** Currently not available
- 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:** 0.287 ppm/48 hr/goldfish/TL_m/fresh water
- 6.2 **Waterfowl Toxicity:** Currently not available
- 6.3 **Biological Oxygen Demand (BOD):** 53%, 5 days 25% (theo.), 0.5 days, as catechol
- 6.4 **Food Chain Concentration Potential:** None
- 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Pure; Technical
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Open
- 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: Keep Away From Food
- 8.2 49 CFR Class: 6.1
- 8.3 49 CFR Package Group: III
- 8.4 Marine Pollutant: No
- 8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	1
Instability (Yellow).....	0
- 8.6 EPA Reportable Quantity: 100 pounds
- 8.7 EPA Pollution Category: B
- 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:** Solid
- 9.2 **Molecular Weight:** 110.11
- 9.3 **Boiling Point at 1 atm:** 545°F = 285°C = 558°K
- 9.4 **Freezing Point:** 338°F = 170°C = 443°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.33 at 20°C (solid)
- 9.8 **Liquid Surface Tension:** Not pertinent
- 9.9 **Liquid Water Interfacial Tension:** Not pertinent
- 9.10 **Vapor (Gas) Specific Gravity:** Not pertinent
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
- 9.12 **Latent Heat of Vaporization:** Not pertinent
- 9.13 **Heat of Combustion:** -11,200 Btu/lb = -6,220 cal/g = -260 X 10³ 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:** 58.84 cal/g
- 9.18 **Limiting Value:** Currently not available
- 9.19 **Reid Vapor Pressure:** Currently not available

NOTES

HYDROQUINONE

HDQ

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
	N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T

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
68	7.000		N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T