

Material Safety Data Sheet

HYDROQUINONE PREMIUM

Date Prepared: 2/19/09

Supersedes Date: 1/11/08

1. PRODUCT AND COMPANY IDENTIFICATION

RHODIA INC.
ORGANICS
CN 7500
Cranbury NJ 08512-7500

Emergency Phone Numbers:

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT
CONTACT: CHEMTREC (800-424-9300 within the United States or 703-527-3887 for
international collect calls) or Rhodia CAERS (Communication and Emergency Response System)
at 800-916-3232.

For Product Information:
(609) 860-4000

Chemical Name or Synonym:

1,4-BENZENEDIOL; P-DIHYDROXYBENZENE; P-HYDROXYPHENOL

Molecular Formula:

$C_6H_6O_2$

2. HAZARDS IDENTIFICATION

A. EMERGENCY OVERVIEW:

Physical Appearance and Odor:

white to beige powder or needle-like crystals solid, odorless.

Warning Statements:

WARNING!! HARMFUL IF SWALLOWED OR ABSORBED THROUGH SKIN. SKIN
SENSITIZER. MAY CAUSE METHEMOGLOBINEMIA, CAN ADVERSELY AFFECT THE
NERVOUS SYSTEM, KIDNEYS, MODERATE TO SEVERE DUST EXPLOSION RISK.
POSSIBLE CANCER HAZARD. MAY CAUSE CANCER BASED ON ANIMAL DATA. VERY
TOXIC TO AQUATIC ORGANISMS.

B. POTENTIAL HEALTH EFFECTS:

Acute Eye:

Dusts may cause corneal scratch.

Acute Skin:

Harmful if absorbed through skin. Irritant. Sensitizer. Can cause skin depigmentation, May produce symptoms similar to those from ingestion.

Acute Inhalation:

May be harmful if inhaled. Dusts and fumes may cause respiratory tract irritation.

Acute Ingestion:

Harmful if ingested. Can cause nausea, dizziness, headache, delirium, involuntary shaking, rapid breathing, prostration, an excess of methemaglobin in blood, bluish-purple discoloration of skin.

Chronic Effects:

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens. (See Section 11-Chronic for a discussion of animal studies.) Long-term exposure to large doses may cause kidney damage, central nervous system damage, darkening of the eyes.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Reg Number	OSHA Hazard	% WT/WT
HYDROQUINONE	123-31-9	Y	>= 99

4. FIRST AID MEASURES

FIRST AID MEASURES FOR ACCIDENTAL:**Eye Exposure:**

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek medical attention if irritation develops or persists or if visual changes occur.

Skin Exposure:

In case of contact, immediately wash with plenty of soap and water for at least 15 minutes. Particular attention should be paid to hair, nose, ears and other areas not easily cleaned. Seek immediate medical attention. Remove contaminated clothing and shoes while washing. Clean contaminated clothing and shoes before re-use or discard if they cannot be thoroughly cleaned. Heavily contaminated shoes and clothing should be discarded in a manner which limits further exposure. Launder contaminated clothing separately.

Inhalation:

If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if respiratory irritation or distress continues.

Ingestion:

Do not induce vomiting, unless directed to do so by a physician. If victim is conscious and alert, wash out mouth with water and keep at rest. Do not leave victim unattended. Vomiting may occur spontaneously. To prevent aspiration of swallowed product, lay victim on side. Seek medical

attention.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Skin contact may aggravate existing skin disease. Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis.

NOTES TO PHYSICIAN:

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Treat symptomatically. No specific antidote available.

5. FIRE FIGHTING MEASURES

FIRE HAZARD DATA:

Flash Point:

165 C (329 F). Flammability Class: WILL BURN.

Method Used:

Tagliabue Closed Cup

Flammability Limits (vol/vol%): Lower: Upper:
No Data No Data

Extinguishing Media:

Recommended (small fires): dry chemical, carbon dioxide, Recommended (large fire): alcohol foam, universal foam, water spray.

Special Fire Fighting Procedures:

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Cool closed containers exposed to fire with water.

Unusual Fire and Explosion Hazards:

Product will burn under fire conditions. As a powder or dust, this product (when mixed with air in critical proportions and in the presence of an ignition source) presents a moderate to high explosion hazard. Under fire conditions, toxic, corrosive fumes are emitted.

Hazardous Decomposition Materials (Under Fire Conditions):

phenol
oxides of carbon

Autoignition Temperature:

520 C (968 F)

Dust Explosivity Data:

Explosibility Index: 2 Type of Explosion is Rated
STRONG.

Ignition Sensitivity: No Data

Explosion Severity:	No Data
Cloud Ignition Temp:	No Data
Min Cloud Ignition Energy:	< 10 milliJoules
Layer Ignition Temp:	No Data
Max. Explosion Pressure:	8.1 bars
Max. Rate of Pressure Rise:	909 bars/second
Min. Explosion Concentration:	No Data

6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures and Safety:

Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Containment of Spill:

Follow procedure described below under Cleanup and Disposal of Spill.

Cleanup and Disposal of Spill:

Sweep up and place in an appropriate closed container (see Section 7: Handling and Storage). Use non-sparking tools. Avoid creation of dusty conditions. Clean up residual material by washing area with a 2-5% solution of soda ash. Flush with copious amounts of water. Collect washings for disposal. Decontaminate tools and equipment following cleanup. Ventilate area.

Environmental and Regulatory Reporting:

Do not flush to drain. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

Minimum/Maximum Storage Temperatures:

Not Available

Handling:

Do not get in eyes. Avoid direct or prolonged contact with skin. Do not breathe dust or vapors. Do not ingest. Use nonsparking tools and grounded/bonded equipment and containers when transferring.

THIS PRODUCT PRESENTS A MODERATE TO SEVERE DUST EXPLOSION HAZARD. Dry powders can build static electricity charges when subjected to the friction of conveying, mixing or sliding. Provide adequate precautions, such as electrical grounding, or inert atmospheres when material is used in the presence of flammable materials to prevent ignition. It is recommended that all dust control equipment and material transport systems involved in handling of this product contain explosion relief vents or explosion suppression system or an oxygen deficient

environment. In addition, all conductive elements of the system that contact this material should be electrically bonded and grounded. This powder should not be flowed through non-conductive ducts or pipes. Use only appropriately classed electrical equipment.

Storage:

Store in tightly closed containers. Store in an area that is cool, dry, well-ventilated, Keep out of direct sunlight. This product is hygroscopic and tends to cake on storage. away from ignition sources.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Introductory Remarks:

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

Exposure Guidelines:

Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to this material, where, if indicated, S=skin and C=ceiling limit:

HYDROQUINONE

	Notes	TWA	STEL
ACGIH		1 mg/cu m	
OSHA		2 mg/cu m	

Engineering Controls:

Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: local exhaust ventilation at the point of generation.

Respiratory Protection:

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate OSHA, WHMIS or ANSI standard(s): Air-purifying (half-mask/full-face) respirator with cartridges/canister approved for use against dusts, mists and fumes.

Eye/Face Protection:

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area.

Skin Protection:

Skin contact should be minimized through use of gloves and suitable long-sleeved clothing (i.e., shirts and pants). Consideration must be given both to durability as well as permeation resistance.

Work Practice Controls:

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

- (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- (3) Wash exposed skin promptly to remove accidental splashes or contact with this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

Physical Appearance:

white to beige powder or needle-like crystals solid.

Odor:

odorless.

pH:

3.75 at 7 wt/wt%.

Specific Gravity:

1.35 at 20 C (68 F).

Water Solubility:

slightly soluble 7 wt/wt% at 25 C (77 F).

Melting Point Range:

171 to 174 C (340 to 345 F)

Boiling Point Range:

286 to 287 C (547 to 549 F) at 760 mmHg

Vapor Pressure:

0.1 mmHg at 60 C (140 F)

Vapor Density:

3.8

Octanol/Water Partition Coefficient:
0.5

Molecular Weight:
110.1

10. STABILITY AND REACTIVITY

Chemical Stability:

This material is stable under normal handling and storage conditions described in Section 7.

Conditions To Be Avoided:

direct sunlight
dusting conditions
extreme heat
hot surfaces
open flame
spark
static electricity

Materials/Chemicals To Be Avoided:

aluminum
strong bases
strong oxidizing agents

The Following Hazardous Decomposition Products Might Be Expected:

Decomposition Type: thermal

phenol
oxides of carbon

Hazardous Polymerization Will Not Occur.

Avoid The Following To Inhibit Hazardous Polymerization:

not applicable

11. TOXICOLOGICAL INFORMATION

Acute Eye Irritation:

Toxicological Information and Interpretation:

eye - eye irritation, rabbit. Irritation is transient.

Acute Skin Irritation:

Toxicological Information and Interpretation:

skin - skin irritation, 5 %, human. Irritating.

skin - skin irritation, guinea pig. Slightly irritating.
skin - sensitization, guinea pig. Sensitizing.
skin - skin irritation, rabbit. Non-irritating to minimally irritating.

Acute Dermal Toxicity:

Toxicological Information and Interpretation:

LD50 - lethal dose 50% of test species, > 900 mg/kg, rat.

LD50 - lethal dose 50% of test species, > 2000 mg/kg, rabbit.

Acute Respiratory Irritation:

No test data found for product.

Acute Inhalation Toxicity:

No test data found for product.

Acute Oral Toxicity:

Toxicological Information and Interpretation:

LD50 - lethal dose 50% of test species, 320 mg/kg, rat.

LD50 - lethal dose 50% of test species, 245 mg/kg, mouse.

Chronic Toxicity:

This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.

Hydroquinone has been assigned an IARC overall evaluation of 3 (not classifiable as to carcinogenicity in humans). There is limited evidence of carcinogenicity in experimental animals. Long-term exposure to hydroquinone has caused darkening of the corneal epithelium.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

Ecotoxicological Information and Interpretation:

EC50 - effective concentration 50% of test species, 0.335 mg/l/72 hr, algae.

EC50 - effective concentration 50% of test species, 0.11 mg/l/24 hr, *Daphnia magna*.

LC50 - lethal concentration 50% of test species, < 0.18 mg/l/96 hr, fish: *Pimephales promelas*.

Chemical Fate Information:

Readily biodegradable.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local

regulations regarding the proper disposal of this material.

Container Handling and Disposal:

Any containers or equipment used should be decontaminated immediately after use.

EPA Hazardous Waste - NO

14. TRANSPORT INFORMATION

Transportation Status: IMPORTANT! Statements below provide additional data on listed DOT classification.

The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

This product is designated as environmentally hazardous by the competent authority of the country of import or export. Special Provision 146 of 49 CFR authorizes the use of the transport description shown below for domestic shipments of a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 49 CFR 171.8, or any other hazard class, as defined in Part 173 of 49 CFR, if another Competent Authority identifies it as such.

US DOT:

Hazard Class..... 9

Shipping Name:

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Technical Shipping Name:

HYDROQUINONE

ID Number..... UN3077

Packing Group.... III

Labels..... CLASS 9

Emergency Guide #.... 171

TDG:

Hazard Class..... 9

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Technical Shipping Name: HYDROQUINONE

ID Number..... UN3077

Packing Group.... III

IMO:

Hazard Class..... 9

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Technical Shipping Name: HYDROQUINONE

ID Number..... UN3077

Packing Group.... III

IATA:

Hazard Class..... 9

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ID Number..... UN3077

Packing Group.... III

15. REGULATORY INFORMATION

Inventory Status

Inventory	Status
UNITED STATES (TSCA)	Y
CANADA (DSL)	Y
EUROPE (EINECS/ELINCS)	Y
AUSTRALIA (AICS)	Y
JAPAN (MITI)	Y
SOUTH KOREA (KECL)	Y

Y = All ingredients are on the inventory.

E = All ingredients are on the inventory or exempt from listing.

P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

FEDERAL REGULATIONS

Inventory Issues:

All functional components of this product are listed on the TSCA Inventory.

SARA Title III Hazard Classes:

Fire Hazard	- NO
Reactive Hazard	- NO
Release of Pressure	- NO
Acute Health Hazard	- YES
Chronic Health Hazard	- YES

SARA 313 Chemicals

HYDROQUINONE (>=99%)

SARA Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

Ingredient	CERCLA/SARA RQ	SARA EHS TPQ
HYDROQUINONE	100 lbs	500 10000

STATE REGULATIONS:

This product does not contain any components that are regulated under California Proposition 65.

16. OTHER INFORMATION

National Fire Protection Association Hazard Ratings--NFPA(R):

- 3 Health Hazard Rating--Serious
- 3 Flammability Rating--Serious
- 0 Instability Rating--Minimal

National Paint & Coating Hazardous Materials Identification System--HMIS(R):

- 3 Health Hazard Rating--Serious
- 1 Flammability Rating--Slight
- 0 Reactivity Rating--Minimal

Reason for Revisions:

Change and/or addition made to Section 4.

Key Legend Information:

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
TLV - Threshold Limit Value
PEL - Permissible Exposure Limit
TWA - Time Weighted Average
STEL - Short Term Exposure Limit
NTP - National Toxicology Program
IARC - International Agency for Research on Cancer
ND - Not determined
RHODIA - Rhodia Established Exposure Limits

Disclaimer:

The information herein is given in good faith but no warranty, expressed or implied, is made.

**** End of MSDS Document ****