

Hydroquinone SDS/MSDS (Safety Data Sheet)

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

* Product Name: Hydroquinone

* Catalog Number: S4580

* CAS Number: 123-31-9

* IUPAC Name: 1,4-Benzenediol

Relevant identified uses and uses advised against

* Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.

* Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

* Company: Selleck Chemicals

* TollFree: +1 877 796-6397

* Tel: +1 832 582-8158

* Fax: +1 832 582-8590

Emergency telephone number

* Emergency phone #: +1 832 582-8158

2. HAZARDS IDENTIFICATION

2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Acute toxicity (oral): Category 4. H302

Acute toxicity (dermal): Category 4. H312

Skin irritation: Category 2. H315

Skin irritation: Category 3. H316

Skin sensitization: Category 1. H317

Serious eye damage: Category 1. H318

Serious eye irritation: Category 2. H319

Specific target organ toxicity (single exposure): Category 3. H336

Germ cell mutagenicity: Category 1. H340

Germ cell mutagenicity: Category 2. H341

Carcinogenicity: Category 2. H351

Reproductive toxicity: Category 1. H360

Specific target organ toxicity (single exposure): Category 1. H370

Specific target organ toxicity (repeated exposure): Category 1. H372

Specific target organ toxicity (repeated exposure): Category 2. H373

Acute aquatic toxicity: Category 1. H400

Chronic aquatic toxicity: Category 1. H410

2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word

Danger

Hazard statement(s)

H302: Harmful if swallowed
H312: Harmful in contact with skin
H315: Causes skin irritation
H316: Causes mild skin irritation
H317: May cause an allergic skin reaction
H318: Causes serious eye damage
H319: Causes serious eye irritation
H336: May cause drowsiness or dizziness
H340: May cause genetic defects
H341: Suspected of causing genetic defects
H351: Suspected of causing cancer
H360: May damage fertility or the unborn child
H370: Causes damage to organs
H372: Causes damage to organs through prolonged or repeated exposure
H373: May causes damage to organs through prolonged or repeated exposure
H400: Very toxic to aquatic life
H410: Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

None.

Prevention

P203: Obtain, read and follow all safety instructions before use.
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
P264: Wash hands thoroughly after handling.
P264+P265: Wash hands thoroughly after handling. Do not touch eyes.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response	P301+P317: IF SWALLOWED: Get medical help. P302+P352: IF ON SKIN: wash with plenty of water. P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351: IF IN EYES: Rinse cautiously with water for several minutes. P305+P354: IF IN EYES: Immediately rinse with water for several minutes. P308+P316: IF exposed or concerned: Get emergency medical help immediately. P317: Get emergency medical help. P318: if exposed or concerned, get medical advice. P319: Get medical help if you feel unwell. P321: Specific treatment (see information on this label and safety datasheet)). P330: Rinse mouth. P332+P317: If skin irritation occurs: Get medical help. P333+P317: If skin irritation or rash occurs: Get medical help. P337+P317: If eye irritation persists: Get medical help. P338: Remove contact lenses, if present and easy to do. Continue rinsing. P362+P364: Take off contaminated clothing and wash it before reuse. P391: Collect spillage.
Storage	P403+P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.
Disposal	P501: P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Product name: Hydroquinone
CAS Number: 123-31-9
PubChem CID: 785
Molecular formula: C₆H₆O₂
Molecular weight: 110.11 g/mol
IUPAC name: benzene-1,4-diol

3.2 Mixtures

Not applicable (pure substance).

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Inhalation: Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Skin contact: Remove contaminated clothes. Rinse and then wash skin with water and soap.

Eye contact: First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Ingestion: Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention .

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 (Toxicological Information).

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact a poison control center or physician for severe exposure.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable: Water spray, dry chemical, carbon dioxide (CO₂), alcohol-resistant foam.

Unsuitable: None known.

5.2 Specific hazards arising from the substance or mixture

Wear self-contained (positive pressure if available) breathing apparatus and full protective clothing.

For small fires use dry chemical, carbon dioxide, water spray or foam. Move container from fire area if you can do so without risk. This compound is a slight fire or explosion hazard. (EPA, 1998)

Use water spray, powder, foam, carbon dioxide.

To fight fire, use water, carbon dioxide, dry chem ...

If material on fire or involved in fire: Extinguish fire using agent suitable for type of surrounding fire (Material itself does not burn or burns with difficulty). Use water in flooding quantities as fog. Apply water from as far a distance as possible. Keep run-off water out of sewers and water sources.

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Advice for firefighters: Wear self contained breathing apparatus for fire fighting if necessary.

Special hazards arising from the substance or mixture: Carbon oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

Flash point: 329 °F (EPA, 1998)

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

6.2 Environmental precautions

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

6.3 Methods and materials for containment and cleaning up

Excerpt from ERG Guide 171 [Substances (Low to Moderate Hazard)]:

IMMEDIATE PRECAUTIONARY MEASURE: Isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.

SPILL: Increase the immediate precautionary measure distance, in the downwind direction, as necessary.

FIRE: If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. (ERG, 2024)

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered sealable containers. Carefully collect remainder. Then store and dispose of according to local regulations.

Environmental Considerations: Land spill: Dig a pit, pond, lagoon, holding area to contain liquid or solid material. Cover solids with a plastic sheet to prevent dissolving in rain or fire fighting water. Dike surface flow using soil, sand bags, foamed polyurethane, or foamed concrete. Absorb bulk liquid with fly ash, cement powder, or commercial sorbents. /SRP: If time permits, pits, ponds, lagoons, soak holes, or holding areas should be sealed with an impermeable flexible membrane liner./

Environmental Considerations: Water spill: Use natural barriers or oil spill control booms to limit spill travel. Use natural deep water pockets, excavated lagoons, or sand bag barriers to trap material at bottom. Remove trapped material with suction hoses.

Environmental Considerations: Air spill: Apply water spray or mist to knock down vapors.

Accidental Release Measures. Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. Methods and materials for containment and cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational harm/injury/toxicity or environmental contamination. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal and plant life; and conformance with environmental and public health regulations.

The following wastewater treatment technologies have been investigated for Hydroquinone: Concentration process: Reverse osmosis.

The following wastewater treatment technologies have been investigated for Hydroquinone: Concentration process: Activated carbon.

Hydroquinone is a waste chemical stream constituent which may be subjected to ultimate disposal by controlled incineration.

For more Disposal Methods (Complete) data for HYDROQUINONE (6 total), please visit the HSDB record page.

Work clothing that becomes wet or significantly contaminated should be removed and replaced.

Workers whose clothing may have become contaminated should change into uncontaminated clothing before leaving the work premises.

The worker should immediately wash the skin when it becomes contaminated.

SRP: The scientific literature for the use of contact lenses by industrial workers is inconsistent. The benefits or detrimental effects of wearing contact lenses depend not only upon the substance, but also on factors including the form of the substance, characteristics and duration of the exposure, the uses of other eye protection equipment, and the hygiene of the lenses. However, there may be individual substances whose irritating or corrosive properties are such that the wearing of contact lenses would be harmful to the eye. In those specific cases, contact lenses should not be worn. In any event, the usual eye protection equipment should be worn even when contact lenses are in place.

For more Preventive Measures (Complete) data for HYDROQUINONE (11 total), please visit the HSDB record page.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Excerpt from ERG Guide 171 [Substances (Low to Moderate Hazard)]:

Do not touch or walk through spilled material. Stop leak if you can do it without risk. Prevent dust cloud. For Asbestos, avoid inhalation of dust. Cover spill with plastic sheet or tarp to minimize spreading. Do not clean up or dispose of, except under supervision of a specialist.

SMALL DRY SPILL: With clean shovel, place material into clean, dry container and cover loosely; move containers from spill area.

SMALL SPILL: Pick up with sand or other non-combustible absorbent material and place into containers for later disposal.

LARGE SPILL: Dike far ahead of liquid spill for later disposal. Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent entry into waterways, sewers, basements or confined areas. (ERG, 2024)

Separated from strong bases and food and feedstuffs.

Keep well closed and protected from light.

Plug tight and store in a place away from direct sunlight.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place. Air and light sensitive.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong bases and food and feedstuffs.

Keep well closed and protected from light.

Plug tight and store in a place away from direct sunlight.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place. Air and light sensitive.

Store away from incompatible materials (see Section 10).

[Note: Specific storage temperature not available in public databases. Refer to supplier Certificate of Analysis (COA) for exact storage conditions.]

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure controls

8.1.1 Occupational exposure limits (OEL)

skin absorption (H); sensitization of skin (SH); carcinogen category: 2; germ cell mutagen group: 3A

8.1.2 Appropriate engineering controls

Use only in a chemical fume hood or with local exhaust ventilation.

Ensure adequate ventilation to keep airborne concentrations below exposure limits.

8.2 Individual protection measures

8.2.1 Eye/face protection

Wear chemical safety goggles and face shield.

8.2.2 Skin protection

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

8.2.3 Respiratory protection

Use NIOSH-approved dust/mist respirator (N95 or higher) if ventilation is inadequate.

8.2.4 Thermal hazards

Not applicable.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- a) Appearance: Hydroquinone appears as light colored crystals or solutions. May irritate the skin, eyes and mucous membranes. Mildly toxic by ingestion or skin absorption.
- b) Odor: Odorless
- c) Odor threshold: No data available
- d) pH: No data available
- e) Melting point/freezing point: 338 to 340 °F (EPA, 1998)
- f) Initial boiling point and boiling range: 545 to 549 °F at 760 mmHg (EPA, 1998)
- g) Flash point: 329 °F (EPA, 1998)
- h) Evaporation rate: No data available
- i) Flammability (solid, gas): No data available
- j) Upper/lower flammability or explosive limits: No data available
- k) Vapor pressure: 4 mmHg at 302 °F (EPA, 1998)
- l) Vapor density: No data available
- m) Relative density: 1.332 at 59 °F (EPA, 1998) - Denser than water; will sink
- n) Water solubility: 10 to 50 mg/mL at 68 °F (NTP, 1992)
- o) Partition coefficient: n-octanol/water: Log P (n-octanol/water): 0.6
- p) Auto-ignition temperature: 960 °F (USCG, 1999)
- q) Decomposition temperature: No data available
- r) Viscosity: No data available
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available

9.2 Other information

Topological Polar Surface Area (TPSA): 40.5 Å²
Complexity: 54

10. STABILITY AND REACTIVITY

10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.

10.5 Incompatible materials

Strong oxidizers, alkalis.

Accidental mixing of the hot crude hydroquinone with concn sodium hydroxide solution led to extensive exothermic decomposition.

Violent reaction with NaOH.

Incompatible materials: Strong bases, strong oxidizing agents

Crude hydroquinone was pumped into a sodium hydroxide storage tank by mistake. The hydroquinone liquor at 85 °C decomposed rapidly in the presence of the sodium hydroxide resulting in overflow of the tank and evolution of a considerable amount of heat.

Strong oxidizers, alkalis

10.6 Hazardous decomposition products

Thermal decomposition may produce: Carbon monoxide (CO), Carbon dioxide (CO₂).

See also Section 5 (Fire-fighting measures) for combustion products.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

No acute toxicity data available.

Skin corrosion/irritation:

Causes skin irritation (H315).

Serious eye damage/eye irritation:

Causes serious eye damage (H318).

Respiratory or skin sensitization:

May cause an allergic skin reaction (H317).

Germ cell mutagenicity:

May cause genetic defects (H340).

Carcinogenicity:

Suspected of causing cancer (H351).

Reproductive toxicity:

May damage fertility or the unborn child (H360).

Specific target organ toxicity (single exposure):

H370, H372, H373

Specific target organ toxicity (repeated exposure):

No data available.

Aspiration hazard:

No data available.

11.2 Additional information

Carcinogen classification:

Hydroquinone

Group 3: Not classifiable as to its carcinogenicity to humans

Volume 15: (1977) Some Fumigants, the Herbicides 2,4-D and 2,4,5-T, Chlorinated Dibenzodioxins and Miscellaneous Industrial Chemicals

Volume Sup 7: Overall Evaluations of Carcinogenicity: An Updating of IARC Monographs Volumes 1 to 42, 1987; 440 pages; ISBN 92-832-1411-0 (out of print)

Volume 71: (1999) Re-evaluation of Some Organic Chemicals, Hydrazine and Hydrogen Peroxide (Part 1, Part 2, Part 3)

1999

1998

Hydroquinone

Exposure routes:

The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

inhalation, ingestion, skin and/or eye contact

Signs and symptoms of exposure:

Cough. Laboured breathing.

Redness.

Redness. Pain. Blurred vision.

Dizziness. Headache. Nausea. Shortness of breath. Convulsions. Vomiting. Ringing in the ears.

irritation eyes: conjunctivitis; keratitis (inflammation of the cornea); central nervous system excitement; colored urine, nausea, dizziness, suffocation, rapid breath; muscle twitching, delirium; collapse; skin irritation, sensitization, dermatitis

Data source: Hazardous Substances Data Bank (HSDB) via PubChem.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

EC50; Species: Chlorococcales (Green algae); Conditions: freshwater, static; Concentration: 17000 ug/L for 24 hr; Effect: physiology; assimilation efficiency /formulation/

EC50; Species: Dunaliella tertiolecta (Green algae); Conditions: freshwater, static, 24 °C, pH 6.8, salinity 2.348%, ; Concentration: 29250 ug/L for 24 hr; Effect: population, decreased photosynthesis /formulation/

EC50; Species: Selenastrum capricornutum (algae); Concentration: 0.335 mg/L for 72 hr; Effect: growth /Conditions of bioassay not specified in source examined/

EC50; Species: Daphnia magna (Water flea) age 6-24 hr; Conditions: freshwater, static, 20 °C, pH > or =7.0; Concentration: 320 ug/L for 24 hr (95% confidence interval: 270-380 ug/L); Effect: intoxication, immobilization /formulation/

For more Ecotoxicity Values (Complete) data for HYDROQUINONE (22 total), please visit the HSDB record page.

/AQUATIC SPECIES/ Sea bass (*Dicentrarchus labrax*) were injected intraperitoneally once (single dose) or three times (fractionated dose) with phenol or OH-phenols (hydroquinone, resorcinol, and pyrocatechol). On the basis of the lethal doses, OH-phenols were more toxic than phenol, and pyrocatechol was the most powerful compound. Hematological, metabolic and antioxidant blood parameters were measured 3 days after the end of the treatment. Metabolic variations as specific effects on erythrocytes were revealed and differences between single and fractionated doses were observed. OH-phenols-treated fish showed

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

Log P (n-octanol/water): 0.6

Low potential for bioaccumulation (Log P < 3).

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available.

12.6 Other adverse effects

This substance is classified as hazardous to the aquatic environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

14. TRANSPORT INFORMATION

14.1 UN number

UN 2662

14.2 UN proper shipping name

Hydroquinone

14.3 Transport hazard class(es)

Class 6.1

DOT label: Class 9 Poison

14.4 Packing group

Packing group III

14.5 Environmental hazards

Marine pollutant: Yes (classified as environmentally hazardous per GHS).

14.6 Special precautions for user

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

DOT Emergency Response Guide (ERG) number: 153

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Registered (REACH Active)

SARA 302 Components:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:

Acute (short-term) health hazard

Chronic (long-term) health hazard

Environmental hazard

Massachusetts Right To Know Components:

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

Pennsylvania Right To Know Components:

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

New Jersey Right To Know Components:

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

California Prop. 65 Components:

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Other regulatory listings:

- The Australian Inventory of Industrial Chemicals: Chemical: 1,4-Benzenediol
- California Safe Cosmetics Program (CSCP) Reportable Ingredient: Hazard Traits - Carcinogenicity Authoritative List - CA TACs Report - if used as a fragrance or flavor ingredient
- EFSA Legal Basis: Commission Regulation (EC) No 1490/2002
- New Jersey Worker and Community Right to Know Act: The New Jersey Worker and Community Right to Know Act requires public and private employers to provide information about hazardous substances at their workplaces. (N.J.S.A. 34:5A-1 et. seq.)
- Atmospheric Standards: This action promulgates standards of performance for equipment leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemical Manufacturing Industry (SOCMI). The intended effect of these standards is to require all newly constructed, modified, and reconstructed SOCMI process units to us

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

16. OTHER INFORMATION

Revision Date: 2026/09/09

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product.

Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.