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SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.2
Creation Date: July 15, 2019
Revision Date: August 08, 2025

SECTION 1: Identification

1.1 GHS Product identifier

Product name Hydroquinone

1.2 Other means of identification

Product number CCEM500577
Other names -

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.
Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.
Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou
Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175
Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Serious eye damage, Category 1
Skin sensitization, Category 1
Germ cell mutagenicity, Category 2
Carcinogenicity, Category 2
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Danger

Hazard statement(s)
H302 Harmful if swallowed
H318 Causes serious eye damage
H317 May cause an allergic skin reaction
H341 Suspected of causing genetic defects
H351 Suspected of causing cancer
H400 Very toxic to aquatic life

Precautionary statement(s)

Prevention
P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P203 Obtain, read and follow all safety instructions before use.
P273 Avoid release to the environment.

Response	P301+P317 IF SWALLOWED: Get medical help. P330 Rinse mouth. P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P317 Get medical help. P302+P352 IF ON SKIN: Wash with plenty of water/... P333+P317 If skin irritation or rash occurs: Get medical help. P321 Specific treatment (see ... on this label). P362+P364 Take off contaminated clothing and wash it before reuse. P318 IF exposed or concerned, get medical advice. P391 Collect spillage.
Storage	P405 Store locked up.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Hydroquinone	Hydroquinone	123-31-9	204-617-8	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

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

Following skin contact

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

Following eye contact

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

Following ingestion

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

4.2 Most important symptoms/effects, acute and delayed

This material is very toxic; the probable oral lethal dose for humans is 50-500 mg/kg, or between 1 teaspoon and 1 ounce for a 150 lb. person. It is irritating but not corrosive. Fatal human doses have ranged from 5-12 grams, but 300-500 mg have been ingested daily for 3-5 months without ill effects. Death is apparently initiated by respiratory failure or anoxia. (EPA, 1998)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Aniline and related compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

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

5.2 Specific hazards arising from the chemical

Dust cloud may explode if ignited in an enclosed area. It can react with oxidizing materials and is rapidly oxidized in the presence of alkaline materials. Oxidizes in air. (EPA, 1998)

5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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.

6.2 Environmental precautions

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.

6.3 Methods and materials for containment and cleaning up

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.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames. Closed system, dust explosion-proof electrical equipment and lighting. Prevent deposition of dust. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong bases and food and feedstuffs.Keep well closed and protected from light.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 1 mg/m3, as TWA; (SEN); A3 (confirmed animal carcinogen with unknown relevance to humans).MAK: skin absorption (H); sensitization of skin (SH); carcinogen category: 2; germ cell mutagen group: 3A

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety goggles.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Solid. Crystalline.
Colour	Colorless, light-tan, light-gray, white.
Odour	Odorless
Melting point/freezing point	172.3 °C.
Boiling point or initial boiling point and boiling range	287 °C. Atm. press.:Ca. 1 013 hPa. Remarks:No atm. pressure cited. Standard conditions assumed.
Flammability	Combustible Solid; dust cloud may explode if ignited in an enclosed area.
Lower and upper explosion limit/flammability limit	no data available
Flash point	165 °C. Atm. press.:Ca. 1 013 hPa.
Auto-ignition temperature	515 °C. Atm. press.:Ca. 1 013 hPa.
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	Partially miscible with water
Partition coefficient n-octanol/water	log Pow = 0.59.
Vapour pressure	0 hPa. Temperature:25 °C. Remarks:Converted from 0.000024 mm Hg.
Density and/or relative density	1.33 g/cm³. Temperature:15 °C.

Relative vapour density	3.81 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Reacts violently with sodium hydroxide.

10.2 Chemical stability

Its solution becomes brown in air due to oxidation.

10.3 Possibility of hazardous reactions

Fire hazard: slight, when exposed to heat or flame; can react with oxidizing materials.Dust explosion possible if in powder or granular form, mixed with air.HYDROQUINONE is a slight explosion hazard when exposed to heat. Incompatible with strong oxidizing agents. Also incompatible with bases. It reacts with oxygen and sodium hydroxide. Reacts with ferric salts (NTP, 1992). Hot and/or concentrated NaOH can cause hydroquinone to decompose exothermically at elevated temperature. (NFPA Pub. 491M, 1975, 385)

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizers, alkalis.

10.6 Hazardous decomposition products

no data available

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 320 mg/kg
- Inhalation: LC0 - rat (female) - >= 2 800 mg/m³ air (nominal).
- Dermal: LD50 - rabbit (male/female) - > 2 000 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Evaluation: There is inadequate evidence in humans for the carcinogenicity of hydroquinone. There is limited evidence in experimental animals for the carcinogenicity of hydroquinone. Overall evaluation: Hydroquinone is not classifiable as to its carcinogenicity to humans (Group 3).

Reproductive toxicity

No information is available on the reproductive or developmental effects of hydroquinone in humans. A slight reduction in maternal body weight gain, decreased fetal weight, increased resorption rate, and reduced fertility in males have been observed in rats orally exposed to hydroquinone via gavage or in the diet. Exposure of rabbits to hydroquinone via gavage produced negligible developmental alterations.

STOT-single exposure

The substance is severely irritating to the eyes. The substance is irritating to the skin and respiratory tract.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis. Repeated or prolonged contact may cause skin sensitization. The substance may have effects on the eyes and skin. This may result in discolouration of the conjunctiva and cornea and skin depigmentation. This substance is possibly carcinogenic to humans.

Aspiration hazard

A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 - Oncorhynchus mykiss (previous name: Salmo gairdneri) - 0.638 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 0.134 mg/L - 48 h.

- Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - 0.33 mg/L - 72 h.
- Toxicity to microorganisms: IC50 - activated sludge of a predominantly domestic sewage - 71 mg/L - 2 h. Remarks:Respiration rate.

12.2 Persistence and degradability

AEROBIC: Hydroquinone at a concentration of 0.05 mg/L underwent 7.5% removal in 5 days when inoculated with an activated sludge seed(1,2). Sewage sludge activated to phenol was found to oxidize hydroquinone(3,4). Pure culture oxidation of hydroquinone produced 1,4-benzoquinone, 2-hydroxy-1,4-benzoquinone and beta-ketoadipic acid(5). In a screening study using a sewage seed, hydroquinone had a 5 day theoretical BOD of 25.3%(6). Hydroquinone at an initial concentration of 200 mg/L COD underwent 54.2% removal (less than 120 hours) using a thickened adapted activated sludge under aerobic conditions(7). Activated sludges adapted to aniline, phenol or m-cresol were found to biodegrade hydroquinone under aerobic conditions(8). It was listed as undergoing rapid biodegradation in a commercial activated sludge unit under aerobic conditions(9).

12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for hydroquinone(SRC), using a log Kow of 0.59(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC). A bioaccumulation factor of 40 was measured using Golden ide fish (Leuciscus idus melanotus) exposed for 3 days to 0.05 mg/L hydroquinone(4,5). Experimental 24-hour bioaccumulation factors in alga were 40 and 65 for hydroquinone(4-6).

12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of hydroquinone is estimated as 240(SRC). According to a classification scheme(2), this estimated Koc value suggests that hydroquinone is expected to have moderate mobility in soil. Hydroquinone can exhibit chemisorption to transition metal-containing particulate matter via reaction with the copper oxide/silca surfaces present(3).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN3082 (For reference only, please check.)	IMDG: UN3082 (For reference only, please check.)	IATA: UN3082 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (For reference only, please check.)	IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (For reference only, please check.)	IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 9 (For reference only, please check.)	IMDG: 9 (For reference only, please check.)	IATA: 9 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: III (For reference only, please check.)	IMDG: III (For reference only, please check.)	IATA: III (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: Yes	IMDG: Yes	IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Hydroquinone	Hydroquinone	123-31-9	204-617-8
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019
Revision Date August 08, 2025

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

Depending on the degree of exposure, periodic medical examination is suggested.No odour warning if toxic concentrations are present.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

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