



SAFETY DATA SHEET

SECTION I - IDENTIFICATION

PRODUCT NAME: Hydroquinone
CAS #: 123-31-9
Manufacturer's Name: CHEM-IS-TRY, INC.
Address: 160-4 LIBERTY ST.
METUCHEN, NJ 08840
Telephone #: (732) 372- 7311 Secondary Telephone No: CHEMTREC
FAX #: (732) 372- 7312 (800) 424-9300
24 Hours a Day

Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Laboratory chemicals, manufacture of substances

SECTION II - HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302
Serious eye damage (Category 1), H318
Skin sensitization (Category 1), H317
Germ cell mutagenicity (Category 2), H341
Carcinogenicity (Category 2), H351
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section XVI.

GHS Label elements, including precautionary statements

Pictogram:



Signal Word: Danger

Hazard Statement(s)

H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink, or smoke when using this product.
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.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION III - COMPOSITION/INFORMATION ON INGREDIENTS**Substances**

Synonyms:	1,4-Benzenediol 1,4-Dihydroxybenzene
Formula:	C ₆ H ₆ O ₂
Molecular Weight:	110.11 g/mol
CAS-No.:	123-31-9
EC-No.:	204-617-8

Component	Classification	Concentration
Hydroquinone	Acute Tox. 4; Eye Dam. 1; Skin Sens. 1; Muta. 2; Carc. 2; Aquatic Acute 1; Aquatic Chronic 1; H302, H318, H317, H341, H351, H400, H410 M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 1	<= 100%

For the full text of the H-Statements mentioned in this Section, see Section XVI.

SECTION IV - FIRST AID MEASURES

Description of first aid measures

General advice, Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled, If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact, Wash off with soap and plenty of water. Consult a physician.

In case of eye contact, Flush eyes with water thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed, Never give anything by mouth to an unconscious person. Rinse mouth with water.

Most important symptoms and effects, both acute and delayed.

The most important known symptoms and effects are described in the labelling (see section II) and/or in section XI.

Indication of any immediate medical attention and special treatment needed

No data available

SECTION V - FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

Special hazards arising from the substance or mixture

Carbon oxides

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

No data available

SECTION VI - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Avoid breathing dust.

For personal protection see section VIII.

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.

Reference to other sections

For disposal see section XIII.

SECTION VII - HANDLING AND STORAGE**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section II.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Air and light sensitive.

Storage class (TRGS 510): XIII: Non-Combustible Solids

Specific end use(s)

Apart from the uses mentioned in section I, no other specific uses are stipulated

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Components with workplace control parameters**

Component	CAS-No.	Value	Control parameters	Basis
Hydroquinone	123-31-9	TWA	1 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Dermal Sensitization Eye irritation Eye damage Confirmed animal carcinogen with unknown relevance to humans Sensitizer		
		TWA	2 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

		C	2 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 MINUTE CEILING VALUE		
		PEL	2 mg/m3	Dalifornia permissible exposure limits for chemical contaminants (Title 8, Article 107)

BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Hydroquinone	123-31-9	Methemoglob in	1.5 % Hb	In blood	ACGIH - Biological Exposure Indices (BEI)
	Remark	During or end of shift			

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

a) Appearance:	Form: crystalline Color: colorless
b) Odor:	No data available
c) Odor Threshold:	No data available
d) pH:	3.7 at 70 g/l
e) Melting point/freezing point:	Melting point/range: 172 - 175 °C (342 - 347 °F) - lit
f) Initial boiling point and boiling range:	285 °C (545 °F) - lit
g) Flash point:	165 °C (329 °F) - closed cup
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:	1 hPa at 132 °C (270 °F)
l) Vapor density:	3.80 - (Air = 1.0)
m) Relative density:	1.332 g/cm ³
n) Water solubility:	50 g/l
o) Partition coefficient: n-octanol/water	log Pow: 0.59
p) Auto-ignition temperature:	515.56 °C (960.01 °F)
q) Decomposition temperature:	No data available
r) Viscosity:	No data available
s) Explosive properties:	No data available
t) Oxidizing properties:	No data available

Other safety information

Bulk density	550 - 650 kg/m ³
Solubility in other solvents	Methanol Diethylether
Relative vapor density	3.80 - (Air = 1.0)

SECTION X - STABILITY AND REACTIVITY**Reactivity**

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

No data available

Conditions to avoid

Air Light.

Incompatible materials

Strong bases, Strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available

In the event of fire: see section V.

SECTION XI - TOXICOLOGICAL INFORMATION**Information on toxicological effects****Acute toxicity**

LD50 Oral - Rat - 367.3 mg/kg (Hydroquinone) (OECD Test Guideline 401)

Inhalation: No data available (Hydroquinone)

LD50 Dermal - Rabbit - > 2,000 mg/kg (Hydroquinone) (OECD Test Guideline 402)

No data available (Hydroquinone)

Skin corrosion/irritation:

Skin – Rabbit

Result – No skin irritation

Remarks – (IUCLID)

Serious eye damage/eye irritation:

Risk of corneal clouding

Respiratory or skin sensitization:

Maximisation Test - Guinea pig

Result: positive

Remarks: (ECHA)

(Regulation (EC) No 1272/2008, Annex VI)

Germ cell mutagenicity:

Suspected of causing genetic defects.

Mutagenicity (mammal cell test): chromosome aberration.

Human lymphocytes

Result: negative

Ames test *S. typhimurium*

Result: negative

In vitro mammalian cell gene mutation test

mouse lymphoma cells

Result: positive

Rat - male and female

Result: negative

(ECHA)

OECD Test Guideline 488

Mouse - male

Result: negative

OECD Test Guideline 478

Rat - male

Result: negative

OECD Test Guideline 474 Mouse - male and female

Result: positive

OECD Test Guideline 483

Mouse - male

Result: positive

Carcinogenicity

Suspected of causing cancer.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

Repeated dose toxicity - Rat - male and female - Oral - 13 Weeks - No observed adverse effect level - 20 mg/kg - Lowest observed adverse effect level - 64 mg/kg

Repeated dose toxicity - Rat - male and female - Dermal - 13 Weeks - No observed adverse effect level - 73.9 mg/kg - Lowest observed adverse effect level - 109.6 mg/kg

RTECS: MX3500000

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

SECTION XII - ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	flow-through test LC50 - Oncorhynchus mykiss (rainbow trout) - 0.64 mg/l - 96 h (OECD Test Guideline 203)
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Toxicity to daphnia (OECD Test Guideline 202) and other aquatic invertebrates	semi-static test EC50 - Daphnia magna (Water flea) - 0.061 mg/l - 48 h
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Toxicity to algae	static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 0.053 mg/l - 72 h (OECD Test Guideline 201)
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Toxicity to bacteria	microtox test EC50 - Photobacterium phosphoreum - 0.038 mg/l - 30 min Remarks: (IUCLID)
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Persistence and degradability

Biodegradability	aerobic - Exposure time 14 d Result: 70 % - Readily biodegradable. (OECD Test Guideline 301C)
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Theoretical oxygen demand	1,890 mg/g Remarks: (IUCLID)
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Ratio BOD/ThBOD	33 % Remarks: (Lit.)
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Bioaccumulative potential

Bioaccumulation	Leuciscus idus (Golden orfe) - 3 d - 50 µg/l (Hydroquinone) Bioconcentration factor (BCF): 40
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Mobility in soil

No data available

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

SECTION XIII - DISPOSAL CONSIDERATIONS**Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chem scrubber.

Contaminated packaging

Dispose of as unused product.

SECTION XIV - TRANSPORT INFORMATION**DOT (US)**

UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Hydroquinone)
Reportable Quantity (RQ): 100 lbs
Poison Inhalation Hazard: No

IMDG

UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Hydroquinone)
Marine pollutant: yes

IATA

UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Hydroquinone)

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packaging's and combination packaging's containing inner packaging's with Dangerous Goods > 5L for liquids or > 5kg for solids.

SECTION XV - REGULATORY INFORMATION**SARA 302 Components**

The following components are subject to reporting levels established by SARA Title III, Section 302.

Hydroquinone	CAS-No.	Revision Date
	123-31-9	2007-03-01

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313.

Hydroquinone	CAS-No. 123-31-9	Revision Date 2007-03-01
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SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right to Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components

Hydroquinone	CAS-No. 123-31-9	Revision Date 2007-03-01
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SECTION XVI - OTHER INFORMATION

See full text of H-Statements under sections II and III.

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