# SAFETY DATA SHEET

**Creation Date** 26-Sep-2009 **Revision Date** 24-Dec-2021 **Revision Number** 5

## 1. Identification

**Product Name** **Hydroquinone**

**Cat No. :** **H329-500**

**CAS No** 123-31-9
**Synonyms** 1,4-Dihydroxybenzene; 1,4-Benzenediol

**Recommended Use** Laboratory chemicals.
**Uses advised against** Food, drug, pesticide or biocidal product use.

**Details of the supplier of the safety data sheet**

**Company**
Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

**Emergency Telephone Number** CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

## 2. Hazard(s) identification

**Classification**
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|---|---|
| Acute oral toxicity | Category 4 |
| Serious Eye Damage/Eye Irritation | Category 1 |
| Skin Sensitization | Category 1 |
| Germ Cell Mutagenicity | Category 2 |
| Carcinogenicity | Category 2 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Respiratory system, Central nervous system (CNS). | |
| Combustible dust | Yes |

**Label Elements**

**Signal Word**
Danger

**Hazard Statements**
May form combustible dust concentrations in air
Harmful if swallowed
May cause an allergic skin reaction
Causes serious eye damage
May cause respiratory irritation
Suspected of causing genetic defects
Suspected of causing cancer

**Precautionary Statements**
**Prevention**
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Use only outdoors or in a well-ventilated area
**Response**
IF exposed or concerned: Get medical attention/advice
**Inhalation**
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
**Skin**
IF ON SKIN: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
**Eyes**
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 or doctor/physician
**Ingestion**
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
**Storage**
Store locked up
Store in a well-ventilated place. Keep container tightly closed
**Disposal**
Dispose of contents/container to an approved waste disposal plant
**Hazards not otherwise classified (HNOC)**
Very toxic to aquatic life

## 3. Composition/Information on Ingredients

| Component | CAS No | Weight % |
|---|---|---|
| Hydroquinone | 123-31-9 | 99 |

## 4. First-aid measures

| | |
|---|---|
| **General Advice** | If symptoms persist, call a physician. |
| **Eye Contact** | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention. |
| **Skin Contact** | Wash off immediately with plenty of water for at least 15 minutes. Get medical attention. |
| **Inhalation** | Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention. |
| **Ingestion** | Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur. |
| **Most important symptoms and effects** | Causes eye burns. May cause allergic skin reaction. . Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing |
| **Notes to Physician** | Treat symptomatically |

## 5. Fire-fighting measures

| | |
|---|---|
| **Suitable Extinguishing Media** | Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. |
| **Unsuitable Extinguishing Media** | No information available |
| **Flash Point** | 165 °C / 329 °F |
| **Method -** | No information available |
| **Autoignition Temperature** | 520 °C / 968 °F |

**Explosion Limits**

| | |
|---|---|
| **Upper** | No data available |
| **Lower** | No data available |
| **Sensitivity to Mechanical Impact** | No information available |
| **Sensitivity to Static Discharge** | No information available |

**Specific Hazards Arising from the Chemical**
Fine dust dispersed in air may ignite. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition. Do not allow run-off from fire-fighting to enter drains or water courses.

**Hazardous Combustion Products**
Carbon monoxide (CO). Carbon dioxide ($CO_2$).
**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

| Health | Flammability | Instability | Physical hazards |
|---|---|---|---|
| 2 | 1 | 1 | N/A |

## 6. Accidental release measures

| | |
|---|---|
| **Personal Precautions** | Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. |
| **Environmental Precautions** | Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage. |
| **Methods for Containment and Clean Up** | Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal. |

## 7. Handling and storage

**Handling** Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

**Storage.** Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Strong oxidizing agents. Strong bases. Alkaline.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component | ACGIH TLV | OSHA PEL | NIOSH IDLH | Mexico OEL (TWA) |
|---|---|---|---|---|
| Hydroquinone | TWA: 1 mg/m³ | (Vacated) TWA: 2 mg/m³<br>TWA: 2 mg/m³ | IDLH: 50 mg/m³<br>Ceiling: 2 mg/m³ | TWA: 1 mg/m³ |

*Legend*

*ACGIH - American Conference of Governmental Industrial Hygienists*
*OSHA - Occupational Safety and Health Administration*
*NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health*

**Engineering Measures** Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal Protective Equipment**

**Eye/face Protection** Tight sealing safety goggles.

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

| | |
|---|---|
| **Physical State** | Solid |
| **Appearance** | Off-white |
| **Odor** | Odorless |
| **Odor Threshold** | No information available |
| **pH** | 3.75 70 g/l aq.sol |
| **Melting Point/Range** | 170 - 174 °C / 338 - 345.2 °F |
| **Boiling Point/Range** | 285 - 287 °C / 545 - 548.6 °F @ 760 mmHg |
| **Flash Point** | 165 °C / 329 °F |
| **Evaporation Rate** | Not applicable |
| **Flammability (solid,gas)** | No information available |
| **Flammability or explosive limits** | |
| **Upper** | No data available |
| **Lower** | No data available |
| **Vapor Pressure** | 1 mmHg @ 132 °C |
| **Vapor Density** | Not applicable |
| **Specific Gravity** | 1.320 |
| **Solubility** | Soluble |
| **Partition coefficient; n-octanol/water** | No data available |
| **Autoignition Temperature** | 520 °C / 968 °F |
| **Decomposition Temperature** | No information available |
| **Viscosity** | Not applicable |

| | |
|---|---|
| **Molecular Formula** | C6 H6 O2 |
| **Molecular Weight** | 110.11 |

## 10. Stability and reactivity

**Reactive Hazard** None known, based on information available

**Stability** Stable under normal conditions.

**Conditions to Avoid** Avoid dust formation. Incompatible products. Excess heat.

**Incompatible Materials** Strong oxidizing agents, Strong bases, Alkaline

**Hazardous Decomposition Products** Carbon monoxide (CO), Carbon dioxide ($CO_2$)

**Hazardous Polymerization** Hazardous polymerization does not occur.

**Hazardous Reactions** None under normal processing.

## 11. Toxicological information

**Acute Toxicity**

**Product Information**

**Component Information**

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Hydroquinone | LD50 = 298 mg/kg ( Rat ) | LD50 = 74800 mg/kg ( Rabbit ) | Not listed |

**Toxicologically Synergistic Products** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** Severe eye irritant

**Sensitization** May cause sensitization by skin contact

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS No | IARC | NTP | ACGIH | OSHA | Mexico |
|---|---|---|---|---|---|---|
| Hydroquinone | 123-31-9 | Not listed | Not listed | A3 | Not listed | A3 |

*ACGIH: (American Conference of Governmental Industrial Hygienists)*

*A1 - Known Human Carcinogen*
*A2 - Suspected Human Carcinogen*
*A3 - Animal Carcinogen*
*ACGIH: (American Conference of Governmental Industrial Hygienists)*

**Mutagenic Effects** Mutagenic category 2

**Reproductive Effects** Experiments have shown reproductive toxicity effects on laboratory animals.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Respiratory system Central nervous system (CNS)

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects,both acute and delayed** Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

**Ecotoxicity**

Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|---|---|---|---|---|
| Hydroquinone | EC50: = 0.335 mg/L, 72h (Pseudokirchneriella subcapitata) | LC50: = 0.17 mg/L, 96h (Brachydanio rerio)<br>LC50: = 0.044 mg/L, 96h flow-through (Oncorhynchus mykiss)<br>LC50: = 0.044 mg/L, 96h flow-through (Pimephales promelas)<br>LC50: 0.1 - 0.18 mg/L, 96h static (Pimephales promelas) | EC50 = 0.038 mg/L 15 min<br>EC50 = 0.0382 mg/L 30 min<br>EC50 = 0.042 mg/L 5 min<br>EC50 = 23.75 mg/L 60 min | EC50: = 0.29 mg/L, 48h (Daphnia magna) |

**Persistence and Degradability** Soluble in water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** . Will likely be mobile in the environment due to its water solubility.

| Component | log Pow |
|---|---|
| Hydroquinone | 0.5 |

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

**DOT**

**UN-No** UN3077
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s.
**Technical Name** HYDROQUINONE
**Hazard Class** 9
**Packing Group** III

**TDG**

**UN-No** UN3077
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s.
**Hazard Class** 9
**Packing Group** III

**IATA**

**UN-No** UN3077
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s.
**Hazard Class** 9
**Packing Group** III

**IMDG/IMO**

**UN-No** UN3077
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s.
**Hazard Class** 9
**Packing Group** III

## 15. Regulatory information

**United States of America Inventory**

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|---|---|---|---|---|
| Hydroquinone | 123-31-9 | X | ACTIVE | - |

**Legend:**
**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

**TSCA 12(b)** - Notices of Export Not applicable

**International Inventories**
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component | CAS No | DSL | NDSL | EINECS | PICCS | ENCS | ISHL | AICS | IECSC | KECL |
|---|---|---|---|---|---|---|---|---|---|---|
| Hydroquinone | 123-31-9 | X | - | 204-617-8 | X | X | X | X | X | KE-35112 |

**KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

**U.S. Federal Regulations**

**SARA 313**

| Component | CAS No | Weight % | SARA 313 - Threshold Values % |
|---|---|---|---|
| Hydroquinone | 123-31-9 | 99 | 1.0 |

**SARA 311/312 Hazard Categories** See section 2 for more information

**CWA (Clean Water Act)** Not applicable

**Clean Air Act**

| Component | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|---|---|---|---|
| Hydroquinone | X | | - |

**OSHA** - Occupational Safety and Health Administration Not applicable

**CERCLA** This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component | Hazardous Substances RQs | CERCLA EHS RQs |
|---|---|---|
| Hydroquinone | 100 lb | 100 lb |

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---|---|---|---|---|---|
| Hydroquinone | X | X | X | X | X |

**U.S. Department of Transportation**
Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

**U.S. Department of Homeland** This product does not contain any DHS chemicals.

**Security**

**Other International Regulations**

**Mexico - Grade** Slight risk, Grade 1

**Authorisation/Restrictions according to EU REACH**

| Component | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|---|---|---|---|
| Hydroquinone | - | Use restricted. See item 75. (see link for restriction details) | - |

*https://echa.europa.eu/substances-restricted-under-reach*

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

| Component | CAS No | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|---|---|---|---|---|---|
| Hydroquinone | 123-31-9 | Listed | Not applicable | Not applicable | Not applicable |

| Component | CAS No | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|---|---|---|---|---|---|
| Hydroquinone | 123-31-9 | Not applicable | Not applicable | Not applicable | Annex I - Y39 |

## 16. Other information

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**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**
**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text**

**End of SDS**