### Material Safety Data Sheet

#### Section 1. Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>Common Name/Trade Name</th>
<th>Catalog Number(s).</th>
<th>CAS#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quinhydrone</td>
<td>Q2010</td>
<td>106-34-3</td>
</tr>
</tbody>
</table>

**Manufacturer**
SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

**Commercial Name(s)**
Not available.

**Synonym**
2,5-Cyclohexadiene-1,4-dione complex with 1,4-benzenediol (1:1); beta-Quinhydrone; Green hydroquinone; Hydroquinone, compd. with p-benzoquinone; p-Benzoinhydroquine; p-Benzoinhoqueine, compd. with hydroquinone (1:1) (8CI)

**Chemical Name**
2,5-Cyclohexadiene-1,4-dione complex with 1,4-benzenediol (1:1)

**Chemical Family**
Not available.

**Chemical Formula**
C₆H₄O₂.C₆H₄(OH)₂

**Supplier**
SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

**TSCA**
TSCA 8(b) inventory: Quinhydrone

### Section 2. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Quinhydrone</td>
<td>106-34-3</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

**Exposure Limits**

#### Toxicological Data on Ingredients

<table>
<thead>
<tr>
<th>Quinhydrone</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORAL (LD50): Acute: 225 mg/kg [Rat].</td>
</tr>
</tbody>
</table>

### Section 3. Hazards Identification

**Potential Acute Health Effects**
Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation (lung irritant).

**Potential Chronic Health Effects**
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance may be toxic to upper respiratory tract, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage.

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Continued on Next Page
### Section 4. First Aid Measures

| Eye Contact | Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention. |
| Skin Contact | In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention. |
| Serious Skin Contact | Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention. |
| Inhalation | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. |
| Serious Inhalation | Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention. |
| Ingestion | Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband. |
| Serious Ingestion | Not available. |

### Section 5. Fire and Explosion Data

| Flammability of the Product | May be combustible at high temperature. |
| Auto-Ignition Temperature | Not available. |
| Flash Points | Not available. |
| Flammable Limits | Not available. |
| Products of Combustion | These products are carbon oxides (CO, CO2). |
| Fire Hazards in Presence of Various Substances | Slightly flammable to flammable in presence of heat. |
| Explosion Hazards in Presence of Various Substances | Risks of explosion of the product in presence of mechanical impact: Not available. |
| Fire Fighting Media and Instructions | SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet. |
| Special Remarks on Fire Hazards | As with most organic solids, fire is possible at elevated temperatures. Material in powder form, capable of creating a dust explosion. |
| Special Remarks on Explosion Hazards | Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. |

### Section 6. Accidental Release Measures

| Small Spill | Use appropriate tools to put the spilled solid in a convenient waste disposal container. |
| Large Spill | Use a shovel to put the material into a convenient waste disposal container. |

### Section 7. Handling and Storage

| Precautions | Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents. |
Section 8. Exposure Controls/Personal Protection

Engineering Controls
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits
Not available.

Section 9. Physical and Chemical Properties

Physical state and appearance
Solid. (Powdered solid. Crystalline powder.)

Molecular Weight
218.21 g/mole

pH (1% soln/water)
Not available.

Boiling Point
Sublimes.

Melting Point
167°C (332.6°F) - 172°C.

Critical Temperature
Not available.

Specific Gravity
1.4 (Water = 1)

Vapor Pressure
Not applicable.

Vapor Density
Not available.

Solubility
Partially soluble in cold water. Solubility in Water: 4 g/L @ 20 deg. C.

Section 10. Stability and Reactivity Data

Stability
The product is stable.

Instability Temperature
Not available.

Conditions of Instability
Excess heat, incompatible materials, light, dust generation

Incompatibility with various substances
Reactive with oxidizing agents.

Corrosivity
Non-corrosive in presence of glass.

Special Remarks on Reactivity
Sensitive to light.

Special Remarks on Corrosivity
Not available.

Polymerization
Will not occur.
### Section 11. Toxicological Information

<table>
<thead>
<tr>
<th>Routes of Entry</th>
<th>Inhalation. Ingestion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to Animals</td>
<td>Acute oral toxicity (LD50): 225 mg/kg [Rat].</td>
</tr>
<tr>
<td>Chronic Effects on Humans</td>
<td>MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: upper respiratory tract, skin, eyes.</td>
</tr>
<tr>
<td>Other Toxic Effects on Humans</td>
<td>Hazardous in case of skin contact (irritant), of ingestion, of inhalation (lung irritant).</td>
</tr>
</tbody>
</table>

#### Special Remarks on Toxicity to Animals

Information on the human health effects from exposure to this substance is limited. Health hazards on this data sheet are based on two related compounds: hydroquinone (CAS 123-31-9) and p-benzoquinone (CAS 106-51-4).

- May affect genetic material (mutagenic). (Hydroquinone and Benzoquinone)
- May cause adverse reproductive effects. (Hydroquinone)
- May cause cancer. (Hydroquinone and Benzoquinone)

#### Special Remarks on Chronic Effects on Humans

Information on the human health effects from exposure to this substance is limited. Health hazards on this data sheet are based on two related compounds: hydroquinone (CAS 123-31-9) and p-benzoquinone (CAS 106-51-4).

Acute Potential Health Effects:
- Skin: Causes moderate to severe skin irritation.
- Eyes: Causes eye irritation. May cause corneal ulceration.
- Inhalation: Can cause respiratory tract irritation.
- Ingestion: Harmful if swallowed.

Effects For Hydroquinone:
- Amounts of 1 gram or more can cause pallor, tinnitus, abdominal cramps, nausea, vomiting, diarrhea, dizziness, twitching, delirium, tremors, excitement, convulsions, muscle contraction or spasticity, ataxia, headache, a sense of suffocation, breathing difficulty, methemoglobinemia (an increase in the level of methemoglobin in the blood which decreases the amount of oxygen in the blood), cyanosis (a bluish discoloration of the skin, lips, nails due to deficient oxygenation of the blood), increased pulse rate, cardiovascular collapse, coma. It may also affect the liver, kidney damage (urine may turn a green or brown-green color which darkens upon standing), bronchopneumonia. Ingestions in the range of 5 to 12 grams have been fatal.
- Effects For p-Benzoquinone:
  - May affect behavior/central nervous system/peripheral nervous system (convulsions, somnolence, tremor, muscle contraction or spasticity, spastic paralysis with or without sensory change), blood/bone marrow changes in bone marrow, respiration (cyanosis)

Chronic Potential Health Effects (Hydroquinone):
- Skin: It is a sensitizer and may cause dermatitis upon repeated or prolonged skin contact. Repeated skin contact causes depigmentation similar in appearance to vitiligo.
- Eyes: Prolonged or repeated exposure to dust at airborne concentrations in the range of 10 to 30 mg/m3 can cause staining of the conjunctiva, corneal opacity, alterations in the corneal curvature as well as pitting and erosion of the corneal surface. These conditions require at least 5 years of exposure to develop, but may persist for some time after removal from exposure.
- Inhalation: Prolonged or repeated inhalation may cause respiratory tract irritation and decreased pulmonary function.
- Ingestion: Prolonged or repeated ingestion may cause weight loss, changes in red blood cell count, normocytic or aplastic anemia, atrophy of the liver, and photosensitization. It may also affect the kidneys and behavior/central nervous system (similar effects to acute ingestion), brain.

#### Special Remarks on Other Toxic Effects on Humans

Not available.

### Section 12. Ecological Information

<table>
<thead>
<tr>
<th>Ecotoxicity</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD5 and COD</td>
<td>Not available.</td>
</tr>
<tr>
<td>Products of Biodegradation</td>
<td>Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.</td>
</tr>
<tr>
<td>Toxicity of the Products of Biodegradation</td>
<td>The products of degradation are less toxic than the product itself.</td>
</tr>
</tbody>
</table>

#### Special Remarks on the Products of Biodegradation

Not available.
Section 13. Disposal Considerations

Waste must be disposed off in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification
CLASS 6.1: Poisonous material.

Identification
UNNA: 2811 : Toxic Solid, organic, n.o.s. (quinhydrone) PG: III

Special Provisions for Transport
Not available.

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations
TSCA 8(b) inventory: Quinhydrone

California Proposition 65 Warnings
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances EINECS No. 203-387-6).
Canada: Listed on Canadian Domestic Substance List (DSL).
China: Listed on National Inventory.
Japan: Not Listed on National Inventory (ENCS).
Korea: Not Listed on National Inventory (KECI).
Philippines: Listed on National Inventory (PICCS).
Australia: Listed on AICS.

Other Classifications
WHMIS (Canada) CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).
CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC) R22- Harmful if swallowed.
R36/37/38- Irritating to eyes, respiratory system and skin.
R40- Limited evidence of a carcinogenic effect.
R50- Very toxic to aquatic organisms.
S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.

HMIS (U.S.A.)
Health Hazard 2
Fire Hazard 1
Reactivity 0
Personal Protection E

National Fire Protection Association (U.S.A.)
Health 2
Flammmability 1
Reactivity 0
Specific hazard

WHMIS (Canada) (Pictograms)

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Section 16. Other Information

<table>
<thead>
<tr>
<th>MSDS Code</th>
<th>Q2905</th>
</tr>
</thead>
<tbody>
<tr>
<td>References</td>
<td>Not available.</td>
</tr>
<tr>
<td>Other Special Considerations</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Validated by Sonia Owen on 7/8/2014.
Verified by Sonia Owen.
Printed 7/8/2014.

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.