SAFETY DATA SHEET

1. Chemical Product and Company Identification

Description:	Quinhydrone powder, 97%
Product Code:	3822-7115
Product Type:	Crystalline solid
Application:	ORP sensor calibration

Manufacturer/Supplier Information
Manufactured for and SDS prepared by:
Georg Fischer Signet LLC
3401 Aero Jet Ave.
El Monte, California 91731

Date Prepared: 11/29/2018
For additional health, safety or regulatory information, call (626) 571-2770

For Chemical Emergency
Spill Leak Fire Exposure or Accident
Call CHEMTREC Day or Night

DOMESTIC NORTH AMERICA 800-424-9300

INTERNATIONAL, REFER TO THE INFORMATION CONTAINED HEREIN AND CALL YOUR LOCAL GF OFFICE

2. Hazard(s) Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):
Acute toxicity, Oral (Category 3), H301
Skin irritation (Category 2), H315
Serious Eye damage / Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS Label Elements:
Pictogram

Signal Word:	**DANGER**
Hazard Statements:	H301 Toxic if swallowed. H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation.
Precautionary Statements:	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. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ eye protection/ face protection. P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302 + P352 IF ON SKIN: Wash with plenty of soap

and water. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312 Call a POISON CENTER or doctor/ physician if you feel unwell. P321 Specific treatment (see supplemental first aid instructions on this label). P330 Rinse mouth. P332 + P313 If skin irritation occurs: Get medical advice/ attention. P337 + P313 If eye irritation persists: Get medical advice/ attention. P362 Take off contaminated clothing and wash before reuse. P403 + P233 Store in a well-ventilated place. Keep container tightly closed. 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: Very toxic to aquatic life

3. Composition/Information on Ingredients:

Quinhydrone

CAS Number: 106-34-3
SARA 313: No

Formula: $C_6H_6O_2 \cdot C_6H_4O_2$
Synonyms: p-Benzoquinhydrone
p-Benzoquinone, compd. with hydroquinone (1:1) (8CI)
Chinhydron (Czech)
2,5-Cyclohexadiene-1,4-dione compd. with 1,4-benzenediol (1:1)
Green hydroquinone
Hydroquinone, compd. with p-benzoquinone
Quinhydrone
beta-Quinhydrone
Molecular Weight: 218.21 g/mol

Component	Classification	Concentration
Quinhydrone	Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; H301, H315, H319, H335	-

4. First Aid Measures

General Information: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration with the aid of a pocket mask equipped with a one way valve or other proper respiratory medical advice. Consult a physician.
Skin Contact: Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
Eye Contact: In case of eye contact rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician or poison control center immediately.

Most Important Symptoms and Effects (both acute and delayed):
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

Indication of Any Immediate Medical Attention and Special Treatment Needed:
No data available

5. Fire Fighting Measures

Suitable Extinguishing Media:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special Hazards Arising from the Substance or Mixture:	Carbon oxides
Protective Equipment and Precautions for Firefighters:	Wear self-contained breathing apparatus for firefighting if necessary.
Further Information:	No data available

NFPA

Health	Flammability	Instability	Physical Hazards
3	1	1	N/A

6. Accidental Release Measures

Personal Precautions:	Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8
Environmental Precautions:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and Materials for Containment and Clean 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 13.

7. Handling and Storage

Handling: Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. For precautions see section 2.

Storage: Keep container tightly closed in a dry and well-ventilated place. Air and light sensitive.

Specific End Use(s): Apart from the uses mentioned in section 1, no other specific uses are stipulated

8. Exposure Controls / Personal Protection

Components with Workplace Control Parameters:	Contains no substances with occupational exposure limit values.
Appropriate Engineering Controls:	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: Face shield and safety glasses. 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:	No protective equipment is needed under normal use conditions.
Control of Environmental Exposure:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. Physical and Chemical Properties

Physical State:	Crystalline
Appearance:	Dark green
Molecular Weight:	218.21 AMU
pH:	N/A
BP/BP Range:	N/A
MP/MP Range:	167 - 172 °C
Freezing Point:	N/A
Vapor Pressure:	N/A
Vapor Density:	N/A
Saturated Vapor Conc:	N/A
Bulk Density:	N/A
Odor Threshold:	N/A
Volatile%:	N/A
VOC Content:	N/A
Water Content:	N/A
Solvent Content:	N/A
Evaporation Rate:	N/A
Viscosity:	N/A
Surface Tension:	N/A
Partition Coefficient:	N/A
Decomposition Temp:	N/A
Flash Point:	N/A
Explosion Limits:	N/A
Flammability:	N/A
Autoignition Temp:	N/A
Refractive Index:	N/A
Optical Rotation:	N/A
Miscellaneous Data:	N/A
Solubility:	N/A

N/A = no data available

10. Stability and Reactivity

Reactivity:	No data available
Chemical Stability:	Stable under recommended storage conditions. May form explosive peroxides. Air sensitive. Light sensitive
Possibility of Hazardous Reactions:	No data available
Conditions to Avoid:	Air, light
Incompatible Materials:	Strong oxidizing agents

Hazardous Decomposition Products: Carbon monoxide (CO), Carbon dioxide (CO2)
In the event of fire: See section 5

11. Toxicological Information

Acute Toxicity: LD50 Oral - rat - 225 mg/kg
Dermal: No data available
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:
IARC: Not Listed
ACGIH: Not Listed
NTP: Not Listed
OSHA: Not Listed
Mexico: Not Listed

Mutagenic Effects: No information available
Reproductive Toxicity: No information available
Teratogenicity: No information available
Specific Target Organ Toxicity – Single Exposure: Inhalation - May cause respiratory irritation.
Specific Target Organ Toxicity – Repeated Exposure: No data available
Aspiration Hazard: No data available
RTECS: VA4550000
Additional Information: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. Ecological Information

Toxicity: Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.
Persistence and Degradability: Persistence is unlikely
Bioaccumulative Potential: No data available
Mobility in Soil: Will likely be mobile in the environment due to its water solubility
Results of PBT and vPvB Assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other Adverse Effects: No data available

13. Disposal Considerations

Waste Treatment Methods: 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 chemical incinerator equipped with an afterburner and scrubber.

Contaminated Packaging: Dispose of as unused product.

14. Transportation Information

DOT (US)

PROPER SHIPPING NAME: Toxic solids, organic, n.o.s. (Quinhydrone)
UN#: 2811
CLASS: 6.1
PACKING GROUP: Packing Group III
HAZARD LABEL: Toxic substances.
PIH: Not PIH

IATA

PROPER SHIPPING NAME:: Toxic solid, organic, n.o.s.
IATA UN NUMBER: 2811
HAZARD CLASS: 6.1
PACKING GROUP: III

IMDG

UN number: 2811
Class: 6.1
Packing group: III
EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Quinhydrone)

15. Regulatory Information

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 Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

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

Pennsylvania Right to Know Components: Quinhydrone CAS-No. 106-34-3

New Jersey Right to Know Components: Quinhydrone CAS-No. 106-34-3

California Prop. 65 Components: This product does not contain any Proposition 65 chemicals.

WHMIS Hazard Class: D1B Toxic materials
D2B Toxic materials

16. Disclaimer

It is the responsibility of the Distributor, Dealer, or Agent to provide a current copy of the SDS to the Consumers of Georg Fischer Piping Systems products. The information contained herein is presented in good faith and has been compiled from sources believed to be reliable. It represents the best information currently available to us. No warranty express or implied, or merchantability, fitness or otherwise is made and we assume no liability resulting from its use. This information is offered for your consideration and users should make their own investigation and verification to determine the suitability of the information for their particular purposes. In no event shall Georg Fischer Piping Systems, the parent company or its subsidiaries be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Georg Fischer Piping Systems has been advised of the possibility of such damages. This information relates to the material designated and may not be valid for such material used in combination with any other materials nor in any process.

Revision

Date of latest revision:	11/29/2018
Responsibility for SDS:	S.K. Wells