SAFETY DATA SHEET

1. Identification of the substance or mixture and of the supplier

GHS Product identifier: FEHLING'S SOLUTION A

Other means of identification
Product No.: 5918, H118

Recommended use of the chemical and restrictions on use

Recommended use: Not available.
Recommended restrictions: Not known.

Supplier's details

Manufacturer

Company Name:	Avantor Performance Materials, Inc.
Address:	3477 Corporate Parkway, Suite 200 Center Valley, PA 18034
Telephone:	Customer Service: 855-282-6867
Fax:	
Contact Person:	Environmental Health & Safety
e-mail:	info@avantormaterials.com

Emergency telephone number:
24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

GHS classification of substance or mixture, and national or regional information:

Health Hazards

Skin Corrosion/Irritation	Category 3

Environmental Hazards

Chronic hazards to the aquatic environment	Category 2

GHS label elements

Hazard symbol(s): No symbol

Signal Word: Warning

Hazard Statement(s): Causes mild skin irritation.
Toxic to aquatic life.

Precautionary statement(s):

Prevention: Avoid release to the environment.

Response: If skin irritation occurs: Get medical advice/attention. Collect spillage.

Disposal: 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.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	Common name and synonyms	CAS number	Concentration*
CUPRIC SULFATE	No data available.	7758-98-7	1.0 - 10%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Description of necessary first-aid measures

Ingestion: Rinse mouth thoroughly. Call a POISON CENTER or doctor/physician if you feel unwell.

Inhalation: Move to fresh air. Get medical attention if symptoms persist.

Skin Contact: Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.

Eye contact: Flush thoroughly with water. If irritation occurs, get medical assistance.

Most important symptoms/effects, acute and delayed

Symptoms: May cause irritation to skin, eyes, and respiratory tract.

Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective action for fire fighters

Special fire fighting procedures:	Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.
Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment.
Environmental Precautions:	Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
Methods and material for containment and cleaning up:	Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination.
Notification Procedures:	Inform authorities if large amounts are involved. Prevent runoff from entering drains, sewers, or streams.

7. Handling and storage

Precautions to ensure safe handling:	Use personal protective equipment as required. Avoid breathing mist or vapor. Wash hands thoroughly after handling. Avoid contact with eyes. Avoid contact with skin.
Conditions for safe storage, including any incompatibilities:	Keep container tightly closed. Store in a cool, dry place. Store in a well-ventilated place.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

Biological Limit Values

None of the components have assigned exposure limits.

Appropriate Engineering Controls:	No data available.

Individual protection measures, such as personal protective equipment

General information:	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Eye/face protection:	Use eye protection.

Skin Protection

Hand Protection:	Wear protective gloves.
Other:	Wear suitable protective clothing.
Respiratory Protection:	In case of inadequate ventilation use suitable respirator.
Hygiene measures:	Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

9. Physical and chemical properties

Appearance

Physical state:	Liquid
Form:	Liquid
Color:	Pale green
Odor:	Odorless
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	0 °C
Initial boiling point and boiling range:	100 °C
Flash Point:	Not applicable
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	1.04 (20 °C)
Solubility(ies)	
Solubility in water:	Completely Soluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	Material is stable under normal conditions.
Possibility of Hazardous Reactions:	Hazardous polymerization does not occur.
Conditions to Avoid:	Contact with incompatible materials.
Incompatible Materials:	Strong oxidizing agents. Metal oxides.

Hazardous Decomposition Products: oxides of copper Oxides of sulfur.

11. Toxicological information

Information on likely routes of exposure

Ingestion: May be harmful if swallowed.

Inhalation: May be harmful if inhaled.

Skin Contact: Causes mild skin irritation.

Eye contact: May irritate eyes.

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion: No data available.

Inhalation: No data available.

Skin Contact: No data available.

Eye contact: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: ATEmix (Rat: 6,772 mg/kg

Dermal
Product: ATEmix (Rat: > 6,000 mg/kg

Inhalation
Product: No data available.

Repeated Dose Toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: Causes mild skin irritation.

Serious Eye Damage/Eye Irritation
Product: May irritate eyes.

Respiratory or Skin Sensitization
Product: Not a skin sensitizer.

Carcinogenicity
Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

ACGIH Carcinogen List:
No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No mutagenic components identified

In vivo
Product: No mutagenic components identified

Reproductive Toxicity
Product: No components toxic to reproduction

Specific Target Organ Toxicity - Single Exposure
Product: None known.

Specific Target Organ Toxicity - Repeated Exposure
Product: None known.

Aspiration Hazard
Product: Not classified

Other Effects: None known.

12. Ecological information

Ecotoxicity

Acute hazards to the aquatic environment

Fish
Product: LC 50 (Western mosquitofish (Gambusia affinis), 4 d): 2.89 mg/l Mortality
LC 50 (Bluegill (Lepomis macrochirus), 96 h): 17.38 mg/l Mortality

Aquatic Invertebrates
Product: LC 50 (Snail (Indoplanorbis exustus), 48 h): 6.55 mg/l Mortality
LC 50 (Tubificid worm (Tubifex tubifex), 48 h): 5.87 mg/l Mortality

Chronic hazards to the aquatic environment

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to Aquatic Plants
Product: LC 50 (Blue-green algae (Spirulina platensis), 86.4 h): 15.80 mg/l Mortality

Persistence and Degradability

Biodegradation
Product: There are no data on the degradability of this product.

BOD/COD Ratio
Product: No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)
Product: No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)
Product: No data available.

Mobility
Mobility in Soil: The product is water soluble and may spread in water systems.

Other Adverse Effects: Very toxic to aquatic life with long lasting effects.

13. Disposal considerations

Disposal methods

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws. 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.

Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

IATA

Not regulated.

IMDG

Not regulated.

15. Regulatory information

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

Thailand. Hazardous Substances Prohibited from On-line Notification System (Notification of Ministry of Industry, B.E. 2547)
Not Regulated

Thailand. Notification of Ministry of Industry, Re: List of Hazardous Substances B.E. 2538
CUPRIC SULFATE

Thailand. Hazardous Substances under Chapter 3, Duties and Civil Liabilities (Notification of Ministry of Industry Re: Hazardous Substances under Chapter 3 of Hazardous Substances Act)
Not Regulated

Thailand. Notification of the Ministry of Interior, Re: Work Safety Relating to Dangerous Chemicals
Not Regulated

Thailand. Notification of the Ministry of Interior, Re: Work Safety Relating to More Dangerous Chemicals
Not Regulated

Thailand. Reportable Hazardous Substances (Notification of Ministry of Industry Re: Bases respecting report of quantity of hazardous materials under Department of Industrial Works, B.E. 2547)
Not Regulated

International regulations

Montreal protocol

Not Applicable

Stockholm convention

Not Applicable

Rotterdam convention

Not Applicable

Kyoto protocol

Not Applicable

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16.Other information, including date of preparation or last revision

Issue Date:	05.01.2015
Revision Date:	No data available.No data available.
Version #:	1.0
Source of information:	No data available.
Further Information:	No data available.

Disclaimer:

THE INFORMATION PRESENTED IN THIS MATERIAL SAFETY DATA SHEET (MSDS/SDS) WAS PREPARED BY TECHNICAL PERSONNEL BASED ON DATA THAT THEY BELIEVE IN THEIR GOOD FAITH JUDGMENT IS ACCURATE. HOWEVER, THE INFORMATION PROVIDED HEREIN IS PROVIDED “AS IS,” AND AVANTOR PERFORMANCE MATERIALS MAKES AND GIVES NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, AND EXPRESSLY DISCLAIMS ALL WARRANTIES REGARDING SUCH INFORMATION AND THE PRODUCT TO WHICH IT RELATES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION<(>,<)> WARRANTIES OF ACCURACY, COMPLETENESS, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY, STABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. THIS MSDS/SDS IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PROPERLY TRAINED PERSON USING THIS PRODUCT, AND IS NOT INTENDED TO BE COMPREHENSIVE AS TO THE MANNER AND CONDITIONS OF USE, HANDLING, STORAGE, OR DISPOSAL OF THE PRODUCT. INDIVIDUALS RECEIVING THIS MSDS/SDS MUST ALWAYS EXERCISE THEIR OWN INDEPENDENT JUDGMENT IN DETERMINING THE APPROPRIATENESS OF SUCH ISSUES. ACCORDINGLY, AVANTOR PERFORMANCE MATERIALS ASSUMES NO LIABILITY WHATSOEVER FOR THE USE OF OR RELIANCE UPON THIS INFORMATION. NO SUGGESTIONS FOR USE ARE INTENDED AS, AND NOTHING HEREIN SHALL BE CONSTRUED AS, A RECOMMENDATION TO INFRINGE ANY EXISTING PATENTS OR TO VIOLATE ANY FEDERAL, STATE, LOCAL, OR FOREIGN LAWS. AVANTOR PERFORMANCE MATERIALS REMINDS YOU THAT IT IS YOUR LEGAL DUTY TO MAKE ALL INFORMATION IN THIS MSDS/SDS AVAILABLE TO YOUR EMPLOYEES.