Safety Data Sheet

Fehling's Solution, A

CAROLINA®
www.carolina.com

Section 1 Product Description

Product Name:	Fehling's Solution, A
Recommended Use:	Science education applications
Synonyms:	N/A
Distributor:	Carolina Biological Supply Company 2700 York Road, Burlington, NC 27215 1-800-227-1150
Chemical Information:	800-227-1150 (8am-5pm (ET) M-F)
Chemtrec:	800-424-9300 (Transportation Spill Response 24 hours)

Section 2 Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

WARNING

Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

GHS Classification:
Hazardous to the aquatic environment - Acute Category 1, Hazardous to the aquatic environment - Chronic Category 2, Skin Corrosion/Irritation Category 3, Acute Toxicity - Oral Category 5

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%
Water	7732-18-5	93
Copper (II) Sulfate, Anhydrous	7758-98-7	7

Section 4 First Aid Measures

Emergency and First Aid Procedures

Inhalation:	In case of accident by inhalation: remove casualty to fresh air and keep at rest.
Eyes:	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact:	After contact with skin, wash immediately with plenty of water.
Ingestion:	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Section 5 Firefighting Procedures

Extinguishing Media:	Use media suitable to extinguish surrounding fire.
Fire Fighting Methods and Protection:	Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.
Fire and/or Explosion Hazards:	Fire or excessive heat may produce hazardous decomposition products.
Hazardous Combustion Products:	Sulfur Oxides, Metal Oxides,

Section 6 Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled: Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this SDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill. Ventilate the contaminated area. Isolate area. Keep unnecessary personnel away.
Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation. Do not allow the spilled product to enter public drainage system or open waterways. Gather and store in a sealed container pending a waste disposal evaluation. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container Collect spillage.

Section 7 Handling and Storage

Handling: Avoid release to the environment. Keep container tightly closed in a cool, well-ventilated place. Avoid contact with skin and eyes. After contact with skin, wash immediately with plenty of water. Harmful if swallowed.

Storage: Suitable for any general chemical storage.
Keep container tightly closed in a cool, well-ventilated place.
Material is hygroscopic (absorbs moisture).

Storage Code: Green - general chemical storage

Section 8 Protection Information

	ACGIH		OSHA PEL	
Chemical Name	**(TWA)**	**(STEL)**	**(TWA)**	**(STEL)**
Copper (II) Sulfate, Anhydrous	1 mg/m3 TWA (dust and mist, as Cu)	N/A	N/A	N/A

Control Parameters

Engineering Measures: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Personal Protective Equipment (PPE): Lab coat, apron, eye wash, safety shower.

Respiratory Protection: No respiratory protection required under normal conditions of use.

Respirator Type(s): None required where adequate ventilation is provided. If airborne concentrations are above the applicable exposure limits, use NIOSH/MSHA approved respiratory protection.

Eye Protection: Wear chemical splash goggles when handling this product. Have an eye wash station available.

Skin Protection: Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Where use can result in skin contact, practice good personal hygiene. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly.

Gloves: Natural rubber, Neoprene, PVC or equivalent.

Section 9 Physical Data

Formula: See Section 3
Molecular Weight: 159.60 g/mol
Appearance: Colorless Liquid
Odor: Mild
Odor Threshold: No data available
pH: 4.0, conc: 0.2 M at 4 °C
Melting Point: Estimated -5 C
Boiling Point: 100 C
Flash Point: No data available
Flammable Limits in Air: N/A

Vapor Pressure: 14 (Water)
Evaporation Rate (BuAc=1): >1
Vapor Density (Air=1): 0.7 (Water)
Specific Gravity: Approximately 1.1
Solubility in Water: Soluble
Log Pow (calculated): No data available
Autoignition Temperature: No data available
Decomposition Temperature: No data available
Viscosity: No data available
Percent Volatile by Volume: 93%

Section 10 Reactivity Data

Reactivity: No data available

Chemical Stability: Stable under normal conditions.
Conditions to Avoid: Exposure to moisture
Incompatible Materials: Water-reactive materials, Hydroxylamine, Hypobromite, Strong oxidizing agents
Hazardous Decomposition Products: Metal Oxides,, Sulfur Oxides
Hazardous Polymerization: Will not occur

Section 11 Toxicity Data

Routes of Entry Inhaltion and skin contact.
Symptoms (Acute): Eye disorders, , Respiratory disorders
Delayed Effects: No data available

Acute Toxicity:

Chemical Name	CAS Number	Oral LD50	Dermal LD50	Inhalation LC50
Water	7732-18-5	Oral LD50 Rat 90000 mg/kg		

Carcinogenicity:

Chemical Name	CAS Number	IARC	NTP	OSHA
No data available		Not listed	Not listed	Not listed

Chronic Effects:
Mutagenicity: No evidence of a mutagenic effect.
Teratogenicity: No evidence of a teratogenic effect (birth defect).
Sensitization: No evidence of a sensitization effect.
Reproductive: No evidence of negative reproductive effects.
Target Organ Effects:
Acute: See Section 2
Chronic: Mutation data cited., Tumorigenic data cited., Not listed as a carcinogen by IARC, NTP or OSHA., Reproductive data cited.

Section 12 Ecological Data

Overview: Severe ecological hazard. This product may be toxic to plants and/or wildlife. Highly/very toxic to fish and other water organisms.
Mobility: No data
Persistence: Chemically Transformed, Dissolved into water, Adsorbs to soil.
Bioaccumulation: No data
Degradability: No data
Other Adverse Effects: Mobility is dependant on environmental pH.

Chemical Name	CAS Number	Eco Toxicity
Water	7732-18-5	No data available
Copper (II) Sulfate, Anhydrous	7758-98-7	96 HR LC50 ONCORHYNCHUS MYKISS 0.1 MG/L

Section 13 Disposal Information

Disposal Methods: Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.
Waste Disposal Code(s): Not Determined

Section 14 Transport Information

Ground - DOT Proper Shipping Name:
UN number: 3082 Class: 9 Packing group: III Proper shipping name: Environmentally hazardous substances, liquid, n.o.s. (Copper sulphate) Reportable Quantity (RQ): 145 lbs Marine pollutant: Marine pollutant Poison Inhalation Hazard: No

Air - IATA Proper Shipping Name:
UN number: 3082 Class: 9 Packing group: III Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Copper sulphate)

Section 15 Regulatory Information

TSCA Status: All components in this product are on the TSCA Inventory.

Chemical Name	CAS Number	§ 313 Name	§ 304 RQ	CERCLA RQ	§ 302 TPQ	CAA 112(2) TQ
Copper (II) Sulfate, Anhydrous	7758-98-7	No	10 lb RQ	10 lb final RQ; 4.54 kg final RQ	No	No

Section 16 Additional Information

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The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

Glossary

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
CAS	Chemical Abstract Service Number	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
DOT	U.S. Department of Transportation	ppm	Parts per million
IARC	International Agency for Research on Cancer	RCRA	Resource Conservation and Recovery Act
N/A	Not Available	SARA	Superfund Amendments and Reauthorization Act
		TLV	Threshold Limit Value
		TSCA	Toxic Substances Control Act
		IDLH	Immediately dangerous to life and health