Harrell Industries, Inc.

SAFETY DATA SHEET

Issue Date 14-Apr-2015 **Revision Date** 14-Apr-2015 **Version** 1

1. IDENTIFICATION

Product identifier

Product Name Cupriethylenediamine, 1.00 Molar

Other means of identification

Product Code 1700
UN/ID no. UN1761
Synonyms CUED, bis(ethylenediamine)copper(II), bis(eyhylenediamine)copper (2+)

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory chemicals.
Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address
Harrell Industries, Inc.
2495 Commerce Drive
Rock Hill, SC 29730

www.harrellindustries.com

Emergency telephone number

Company Phone Number 803-327-6335
Fax Number 803-327-7808
24 Hour Emergency Phone Number 800 633-8253 (PERS)

2. HAZARDS IDENTIFICATION

Classification

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

Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

Label elements

Emergency Overview

Danger

Hazard statements
Causes severe skin burns and eye damage

DANGER!! CORROSIVE. Irritant to skin, eyes, and upper respiratory tract.

Appearance Deep purple liquid **Physical state** liquid **Odor** Faint

Precautionary Statements - Prevention
Do not breathe dust.
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see .? on this label)
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
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Not applicable

Other Information
May be harmful if swallowed

Unknown acute toxicity 0.15% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance
Synonyms CUED, bis(ethylenediamine)copper(II), bis(eyhylenediamine)copper (2+).
Formula Cu(NH2CH2CH2NH2)2(22%);H2O(78%)

Chemical Name	CAS No.	Weight-%
Water	7732-18-5	77.5
Cupriethylenediamine	13426-91-0	22.5

4. FIRST AID MEASURES

Description of first aid measures

Eye contact Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Call a physician immediately.

Skin contact Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician immediately. Wash clothing before reuse.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.

Ingestion If swallowed, DO NOT INDUCE VOMITTING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water pray may be used to keep fire exposed containers cool and will also reduce fumes and irritant gases.

Unsuitable extinguishing media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
Thermal decomposition can lead to release of irritating gases and vapors. An explosion hazard exists upon prolonged storage of this product. Studies have not been found with measured shelf-life predictions for this product. The product does appear to be stable for at least one month.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Absorb small spills with inert materials (e.g., vermiculite, dry sand, earth). Carefully sweep up the material and place in an appropriate container for disposal. Do not flush into sewer.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible materials. Containers of this material may be hazardous when empty since they retain product residues (dust, solids). Keep sealed under nitrogen. Do not open bottles stored for more than six months.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Packaging materials This material is safe when contained in glass but will rapidly dissolve paper. It should not be stored in cardboard containers.

Incompatible materials Acids. Carbon dioxide, oxygen.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Cupriethylenediamine 13426-91-0	TWA: 1 mg/m³ Cu dust and mist	-	IDLH: 100 mg/m³ Cu dust and mist TWA: 1 mg/m³ Cu dust and mist

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Use chemical safety goggles and/or full face shield. Maintain eye wash fountain and quick-drench facilities in work area.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid		
Appearance	Deep purple liquid	**Odor**	Faint
Color	Deep purple	**Odor threshold**	No information available

Property	Values	Remarks • Method
pH	12	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Relative density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	1.147-1.167 cst	
Dynamic viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable for one month under ordinary conditions of use and storage. Keep protected from exposure to air or carbon dioxide.
Possibility of Hazardous Reactions
None under normal processing.
Hazardous polymerization Will not occur.

Conditions to avoid
Heat. Air exposure.
Incompatible materials
Acids. Carbon dioxide, oxygen.
Hazardous Decomposition Products
Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information No data available

Inhalation Inhalation of most may cause coughing, choking, with variable symptoms of headache, dizziness, and weakness. May cause lung edema.

Eye contact Corrosive. Red, pain, blurred vision can occur. Can cause burns and permanent eye damage.

Skin contact Corrosive. Redness, pain and skin burns can occur.

Ingestion Corrosive. Sore throat, severe abdominal pain, vomiting, and tissue damage may occur.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Cupriethylenediamine 13426-91-0	= 750 mg/kg (Rat)	> 8 g/kg (Rabbit)	-

Information on toxicological effects

Symptoms No information available.

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

Sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Target Organ Effects	Eyes, Skin, Respiratory system, Central nervous system, liver, kidney.
Aspiration hazard	No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

12. ECOLOGICAL INFORMATION

Toxic to aquatic life.

Ecotoxicity

When released into the soil, this material may biodegrade to a moderate extent. When released into the soil this product may leach into the ground water.

22.5% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations. Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility.

Contaminated packaging Do not reuse container.

Chemical Name	California Hazardous Waste Status
Cupriethylenediamine 13426-91-0	Toxic

14. TRANSPORT INFORMATION

DOT Regulated
- **UN/ID no.** UN1761
- **Proper shipping name** Cupriethylenediamine Solution
- **Hazard Class** 8
- **Subsidiary class** (6.1),
- **Packing Group** II
- **Reportable Quantity (RQ)** 4 L
- **Marine pollutant** Toxic to aquatic life.

TDG Regulated
- **UN/ID no.** UN1761
- **Proper shipping name** Cupriethylenediamine Solution
- **Hazard Class** 8
- **Subsidiary class** 6.1
- **Packing Group** II

MEX Regulated
- **UN/ID no.** UN1761
- **Proper shipping name** Cupriethylenediamine Solution
- **Hazard Class** 8
- **Subsidiary class** 6.1
- **Packing Group** II

ICAO (air)	Regulated
UN/ID no.	UN1761
Proper shipping name	Cupriethylenediamine Solution
Hazard Class	8
Subsidiary hazard class	6.1
Packing Group	II
IATA	Regulated
UN/ID no.	UN1761
Proper shipping name	Cupriethylenediamine Solution
Hazard Class	8
Subsidiary hazard class	6.1
Packing Group	II
IMDG	Regulated
UN/ID no.	UN1761
Proper shipping name	Cupriethylenediamine Solution
Hazard Class	8
Subsidiary hazard class	6.1
Packing Group	II
Marine pollutant	This material meets the definition of a marine pollutant
Description	4L
RID	Regulated
UN/ID no.	UN1761
Proper shipping name	Cupriethylenediamine Solution
Hazard Class	8
Packing Group	II
ADR	Regulated
UN/ID no.	UN1761
Proper shipping name	Cupriethylenediamine Solution
Hazard Class	8
Packing Group	II
ADN	Regulated
UN Number	UN1761
Proper shipping name	Cupriethylenediamine Solution
Hazard Class	8
Packing Group	II

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Does not comply
ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Cupriethylenediamine - 13426-91-0	1.0

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Cupriethylenediamine 13426-91-0	-	X	-	-

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Water 7732-18-5	-	-	X
Cupriethylenediamine 13426-91-0	X	-	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA	**Health hazards** 3	**Flammability** 0	**Instability** 0	**Physical and Chemical Properties** -
HMIS	**Health hazards** 3	**Flammability** 0	**Physical hazards** 0	**Personal protection** X

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Revision Note
No information available

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 Safety Data Sheet