1. IDENTIFICATION

Product identifier
Product Name
Cupric Nitrate, Hemipentahydrate, ACS

Other means of identification
Product Code 1600
UN/ID no. UN1477
Synonyms Cupric nitrate hemipentahydrate, nitric acid, copper (2+) salt, hydrate (2:5), copper II nitrate hemihydrate.

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)

Label elements

Emergency Overview

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.
Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention

Hazards not otherwise classified (HNOC)
Not applicable

Other Information
Not applicable

Unknown acute toxicity
100% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance</th>
<th>Synonyms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cupric nitrate hemipentahydrate, nitric acid, copper (2+) salt, hydrate (2:5), copper II nitrate hemihydrate.</td>
</tr>
<tr>
<td>Formula</td>
<td>Cu(NO3)2.2.5H2O</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cupric Nitrate hemipentahydrate</td>
<td>19004-19-14</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Description of first aid measures

Eye contact
Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician if irritation occurs.

Skin contact
Wipe off excess material from skin. Immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. Call a physician.

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

Ingestion
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician 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 or water spray may be used in the early stages of fire. Foam or dry chemical may also be used.
Small Fire  
Water or water spray may be used in the EARLY STAGES of fire.

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

Specific hazards arising from the chemical  
No information available.

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. Contact with oxidizable substances may cause extremely violent combustion.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions  
Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal equipment.

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  
Pick up and transfer to properly labeled containers. Use a clean up method that does not generate dust.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling  
Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

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

Incompatible materials  
Paper, wood, organic materials, ether, potassium ferrocyanide, tin, acetylene, hydrazine, ammonia+ potassium amide, acetic anhydride, sodium hypobromite, nitromethanes, and any readily oxidizable substance.

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.

Appropriate engineering controls

Engineering Controls  
Shower
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 protective gloves and protective clothing.

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
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</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
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</tr>
<tr>
<td>Appearance</td>
<td>Blue crystals</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>blue</td>
<td>Odor Odorless Odor threshold No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>115 °C / 239 °F</td>
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</tr>
<tr>
<td>Boiling point / boiling range</td>
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<tr>
<td>Flash point</td>
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<tr>
<td>Evaporation rate</td>
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<tr>
<td>Flammability (solid, gas)</td>
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<tr>
<td>Flammability Limit in Air</td>
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</tr>
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</tr>
<tr>
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</tr>
<tr>
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<td>Water solubility</td>
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<td>Solubility in other solvents</td>
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<tr>
<td>Partition coefficient</td>
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<td>Autoignition temperature</td>
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<tr>
<td>Decomposition temperature</td>
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<tr>
<td>Kinematic viscosity</td>
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<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
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<td>Explosive properties</td>
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<td>Oxidizing properties</td>
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<tr>
<td>Other Information</td>
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<td>Softening point</td>
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<td>VOC Content (%)</td>
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</tr>
<tr>
<td>Density</td>
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</tr>
<tr>
<td>Bulk density</td>
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<td></td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity No data available

Chemical stability Stable under recommended storage conditions.

Possibility of Hazardous Reactions None under normal processing.

Hazardous polymerization Will not occur.
Conditions to avoid
Extremes of temperature and direct sunlight. Incompatible materials.

Incompatible materials
Paper, wood, organic materials, ether, potassium ferrocyanide, tin, acetylene, hydrazine, ammonia+ potassium amide, acetic anhydride, sodium hypobromite, nitromethanes, and any readily oxidizable substance.

Hazardous Decomposition Products
Oxides of nitrogen and toxic metal fumes may form when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information
No data available

Inhalation
No data available.

Eye contact
No data available.

Skin contact
No data available.

Ingestion
No data available.

Information on toxicological effects

Symptoms
No information available.

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

Sensitization
Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity
STOT - single exposure
STOT - repeated exposure
Aspiration hazard

Numerical measures of toxicity - Product Information

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

12. ECOLOGICAL INFORMATION

This material is expected to be very toxic to aquatic life.

Ecotoxicity
This material is expected to significantly bioaccumulate. This material has an experimentally-determined bioconcentration factor of greater than 100.

100% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Persistence and degradability

Bioaccumulation
Expected to significantly bioaccumulate.

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.

Contaminated packaging Do not reuse container.

14. TRANSPORT INFORMATION

DOT Regulated
UN/ID no. UN1477
Proper shipping name Nitrates, Inorganic, N.O.S. (Cupric Nitrate, Hydrate ACS)
Hazard Class 5.1
Packing Group II
Reportable Quantity (RQ) 100 lbs (45.4 kg)
Marine pollutant This material is expected to be very toxic to aquatic life.

TDG Regulated
UN/ID no. UN1477
Proper shipping name Nitrates, Inorganic, N.O.S. (Cupric Nitrate, Hydrate ACS)
Hazard Class 5.1
Packing Group II
Marine pollutant This product contains a chemical which is listed as a marine pollutant according to TDG.

MEX Regulated
UN/ID no. UN1477
Proper shipping name Nitrates, Inorganic, N.O.S. (Cupric Nitrate, Hydrate ACS)
Hazard Class 5.1
Packing Group II

ICAO (air) Regulated
UN/ID no. UN1477
Proper shipping name Nitrates, Inorganic, N.O.S. (Cupric Nitrate, Hydrate ACS)
Hazard Class 5.1
Packing Group II

IATA Regulated
UN/ID no. UN1477
Proper shipping name Nitrates, Inorganic, N.O.S. (Cupric Nitrate, Hydrate ACS)
Hazard Class 5.1
Packing Group II

IMDG Regulated
UN/ID no. UN1477
Proper shipping name Nitrates, Inorganic, N.O.S. (Cupric Nitrate, Hydrate ACS)
Hazard Class 5.1
Packing Group II
Marine pollutant This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO

RID Regulated
UN/ID no. UN1477
Proper shipping name Nitrates, Inorganic, N.O.S. (Cupric Nitrate, Hydrate ACS)
Hazard Class 5.1
Packing Group II

ADR Regulated
UN/ID no. UN1477
Proper shipping name Nitrates, Inorganic, N.O.S. (Cupric Nitrate, Hydrate ACS)
Hazard Class 5.1
Packing Group II

ADN Regulated
UN Number  UN1477
Proper shipping name  Nitrates, Inorganic, N.O.S. (Cupric Nitrate, Hydrate ACS)
Hazard Class  5.1
Packing Group  II

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazard Categories
Acute health hazard  Yes
Chronic Health Hazard  No
Fire hazard  No
Sudden release of pressure hazard  No
Reactive Hazard  No

CWA (Clean Water Act)

CERCLA

US State Regulations

California Proposition 65

U.S. State Right-to-Know Regulations

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  2
Flammability  0
Instability  2
Physical and Chemical Properties -

HMIS
Health hazards  2
Flammability  0
Physical hazards  2
Personal protection  X

Issue Date  09-Apr-2015
Revision Date  04-Jun-2015
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