

**1. Identification**

|   |  |                       |  |  |
|---|--|-----------------------|--|--|
| <b>Product identifier</b>                                     | <b>2,9-DIMETHYL-1,10-PHENANTHROLINE, REAGENT (ACS)</b>   |                       |  |  |
| <b>Other means of identification</b>                          |  |                       |  |  |
| <b>Product code</b>   | 154  |                       |  |  |
| <b>Synonyms</b>   | NEOCUPROINE  |                       |  |  |
| <b>Recommended use</b>  | professional, scientific and technical activities: other professional, scientific and technical activities |                       |  |  |
| <b>Recommended restrictions</b>                               | None known.  |                       |  |  |
| <b>Manufacturer/Importer/Supplier/Distributor information</b> |  |                       |  |  |
| <b>Manufacturer</b>   |  |                       |  |  |
| <b>Company name</b>   | GFS Chemicals, Inc.  |                       |  |  |
| <b>Address</b>  | P.O. Box 245<br>Powell, OH 43065<br>United States  |                       |  |  |
| <b>Telephone</b>  | Phone  | 740-881-5501          |  |  |
|   | Toll Free  | 800-858-9682          |  |  |
|   | Fax  | 740-881-5989          |  |  |
| <b>Website</b>  | www.gfchemicals.com  |                       |  |  |
| <b>E-mail</b>   | service@gfchemicals.com  |                       |  |  |
| <b>Emergency phone number</b>                                 | Emergency Assistance   | Chemtrec 800-424-9300 |  |  |

**2. Hazard(s) identification**

|  |   |   |
|--|---|---|
| <b>Physical hazards</b>                          | Not classified.   |   |
| <b>Health hazards</b>                            | <b>Skin corrosion/irritation</b>  | Category 2                              |
|  | <b>Serious eye damage/eye irritation</b>  | Category 2                              |
|  | <b>Specific target organ toxicity, single exposure</b>  | Category 3 respiratory tract irritation |
| <b>Environmental hazards</b>                     | Not classified.   |   |
| <b>OSHA defined hazards</b>                      | Not classified.   |   |
| <b>Label elements</b>                            |    |   |
| <b>Signal word</b>                               | Warning   |   |
| <b>Hazard statement</b>                          | Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.  |   |
| <b>Precautionary statement</b>                   |   |   |
| <b>Prevention</b>                                | Avoid breathing dust. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.  |   |
| <b>Response</b>                                  | IF ON SKIN: Wash with plenty of soap and water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/attention. Call a POISON CENTER or doctor/physician if you feel unwell. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. |   |
| <b>Storage</b>                                   | Store in a well-ventilated place. Keep container tightly closed. Store locked up.   |   |
| <b>Disposal</b>                                  | 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.  |   |
| <b>Hazard(s) not otherwise classified (HNOC)</b> | None known.   |   |
| <b>Supplemental information</b>                  | None.   |   |

**3. Composition/information on ingredients****Substances**

| Chemical name   | Common name and synonyms  | CAS number | %   |
|---|---|------------|-----|
| 2,9-DIMETHYL-1,10-PHENANTHROL<br>INE  | NEOCUPROINE   | 484-11-7   | 100 |
| *Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret. |   |            |     |
| <b>4. First-aid measures</b>  |   |            |     |
| <b>Inhalation</b>   | If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a POISON CENTER or doctor/physician if you feel unwell.   |            |     |
| <b>Skin contact</b>   | Remove and isolate contaminated clothing and shoes. Wash off immediately with plenty of water. Wash contaminated clothing before reuse. Get medical attention if irritation develops and persists.  |            |     |
| <b>Eye contact</b>  | Immediately flush eyes with plenty of water for at least 15 minutes. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Continue rinsing. Get medical attention if irritation develops and persists.  |            |     |
| <b>Ingestion</b>  | Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. Get medical attention if symptoms occur.  |            |     |
| <b>Most important symptoms/effects, acute and delayed</b>   | Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Upper respiratory tract irritation. Skin irritation. May cause redness and pain.  |            |     |
| <b>Indication of immediate medical attention and special treatment needed</b>                                       | Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.  |            |     |
| <b>General information</b>  | If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.   |            |     |
| <b>5. Fire-fighting measures</b>  |   |            |     |
| <b>Suitable extinguishing media</b>   | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).   |            |     |
| <b>Unsuitable extinguishing media</b>   | Do not use water jet as an extinguisher, as this will spread the fire.  |            |     |
| <b>Specific hazards arising from the chemical</b>   | Decomposition of this product may emit oxides of nitrogen and carbon monoxide.  |            |     |
| <b>Special protective equipment and precautions for firefighters</b>  | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.  |            |     |
| <b>Fire fighting equipment/instructions</b>   | Move containers from fire area if you can do it without risk. Use water spray to cool unopened containers.  |            |     |
| <b>Specific methods</b>   | Use standard firefighting procedures and consider the hazards of other involved materials.  |            |     |
| <b>General fire hazards</b>   | No unusual fire or explosion hazards noted.   |            |     |
| <b>6. Accidental release measures</b>   |   |            |     |
| <b>Personal precautions, protective equipment and emergency procedures</b>  | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.   |            |     |
| <b>Methods and materials for containment and cleaning up</b>  | The product is immiscible with water and will sediment in water systems. Prevent entry into waterways, sewers, basements or confined areas. Stop the flow of material, if this is without risk. Sweep up or gather material and place in appropriate container for disposal. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner equipped with HEPA filter. Minimize dust generation and accumulation. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. After removal flush contaminated area thoroughly with water. For waste disposal, see section 13 of the SDS. |            |     |
| <b>Environmental precautions</b>  | Avoid discharge into drains, water courses or onto the ground.  |            |     |
| <b>7. Handling and storage</b>  |   |            |     |
| <b>Precautions for safe handling</b>  | Provide appropriate exhaust ventilation at places where dust is formed. Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.  |            |     |
| <b>Conditions for safe storage, including any incompatibilities</b>   | Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).  |            |     |

## 8. Exposure controls/personal protection

|  |  |
|--|--|
| <b>Occupational exposure limits</b>  | No exposure limits noted for ingredient(s).  |
| <b>Biological limit values</b>   | No biological exposure limits noted for the ingredient(s).   |
| <b>Appropriate engineering controls</b>                                      | 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. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. Eye wash facilities and emergency shower must be available when handling this product. |
| <b>Individual protection measures, such as personal protective equipment</b> |  |
| <b>Eye/face protection</b>   | Wear safety glasses with side shields (or goggles).  |
| <b>Skin protection</b>   |  |
| <b>Hand protection</b>   | Wear appropriate chemical resistant gloves.  |
| <b>Other</b>   | Wear appropriate chemical resistant clothing.  |
| <b>Respiratory protection</b>  | Respirator must be worn if exposed to dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.  |
| <b>Thermal hazards</b>   | Wear appropriate thermal protective clothing, when necessary.  |
| <b>General hygiene considerations</b>  | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.  |

## 9. Physical and chemical properties

### Appearance

|  |                             |
|--|-----------------------------|
| <b>Physical state</b>                          | Solid.                      |
| <b>Form</b>                                    | Powder.                     |
| <b>Color</b>                                   | White to tan or cream.      |
| <b>Odor</b>                                    | Odorless.                   |
| <b>Odor threshold</b>                          | Not available.              |
| <b>pH</b>                                      | Not available.              |
| <b>Melting point/freezing point</b>            | 302 - 320 °F (150 - 160 °C) |
| <b>Initial boiling point and boiling range</b> | Not available.              |
| <b>Flash point</b>                             | Not available.              |
| <b>Evaporation rate</b>                        | Not available.              |
| <b>Flammability (solid, gas)</b>               | Not available.              |

### Upper/lower flammability or explosive limits

|  |                |
|--|----------------|
| <b>Flammability limit - lower (%)</b>          | Not available. |
| <b>Flammability limit - upper (%)</b>          | Not available. |
| <b>Explosive limit - lower (%)</b>             | Not available. |
| <b>Explosive limit - upper (%)</b>             | Not available. |
| <b>Vapor pressure</b>                          | Not available. |
| <b>Vapor density</b>                           | Not available. |
| <b>Relative density</b>                        | Not available. |
| <b>Solubility(ies)</b>                         |                |
| <b>Solubility (water)</b>                      | Insoluble      |
| <b>Partition coefficient (n-octanol/water)</b> | Not available. |
| <b>Auto-ignition temperature</b>               | Not available. |
| <b>Decomposition temperature</b>               | Not available. |
| <b>Viscosity</b>                               | Not available. |

## Other information

|                          |              |
|--------------------------|--------------|
| <b>Molecular formula</b> | C14H12N2     |
| <b>Molecular weight</b>  | 208.25 g/mol |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport.   |
| <b>Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>Possibility of hazardous reactions</b> | Hazardous polymerization does not occur.  |
| <b>Conditions to avoid</b>                | None known. Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). |
| <b>Incompatible materials</b>             | This product may react with strong oxidizing agents.  |
| <b>Hazardous decomposition products</b>   | If product is burned hazardous gases such as oxides of carbon and nitrogen and various hydrocarbons may be produced.                    |

## 11. Toxicological information

### Information on likely routes of exposure

|   |  |
|---|--|
| <b>Inhalation</b>   | Inhalation of dusts may cause respiratory irritation.  |
| <b>Skin contact</b>   | Causes skin irritation.  |
| <b>Eye contact</b>  | Causes serious eye irritation. Dust in the eyes will cause irritation.   |
| <b>Ingestion</b>  | Expected to be a low ingestion hazard.   |
| <b>Symptoms related to the physical, chemical and toxicological characteristics</b> | Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Upper respiratory tract irritation. Skin irritation. May cause redness and pain. |

### Information on toxicological effects

|  |                                   |
|--|-----------------------------------|
| <b>Acute toxicity</b>                    | May cause respiratory irritation. |
| <b>Skin corrosion/irritation</b>         | Causes skin irritation.           |
| <b>Serious eye damage/eye irritation</b> | Causes serious eye irritation.    |

### Respiratory or skin sensitization

|                                  |  |
|----------------------------------|--|
| <b>Respiratory sensitization</b> | Not available.   |
| <b>Skin sensitization</b>        | None known.  |
| <b>Germ cell mutagenicity</b>    | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| <b>Carcinogenicity</b>           | No carcinogenicity data available for this product.  |

### IARC Monographs. Overall Evaluation of Carcinogenicity

Not available.

### US. National Toxicology Program (NTP) Report on Carcinogens

Not available.

|   |  |
|---|--|
| <b>Reproductive toxicity</b>                              | This product is not expected to cause reproductive or developmental effects. |
| <b>Specific target organ toxicity - single exposure</b>   | May cause respiratory irritation.  |
| <b>Specific target organ toxicity - repeated exposure</b> | Not classified.  |
| <b>Aspiration hazard</b>                                  | Not available.   |
| <b>Further information</b>                                | This product has no known adverse effect on human health.                    |

## 12. Ecological information

|                                      |   |
|--------------------------------------|---|
| <b>Ecotoxicity</b>                   | This material is not expected to be harmful to aquatic life.  |
| <b>Persistence and degradability</b> | None known.   |
| <b>Bioaccumulative potential</b>     | No data available.  |
| <b>Mobility in soil</b>              | No data available.  |
| <b>Other adverse effects</b>         | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

## 13. Disposal considerations

|                              |  |
|------------------------------|--|
| <b>Disposal instructions</b> | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. |
|------------------------------|--|

|  |   |
|--|---|
| <b>Local disposal regulations</b>            | Dispose in accordance with all applicable regulations.  |
| <b>Hazardous waste code</b>                  | The waste code should be assigned in discussion between the user, the producer and the waste disposal company.  |
| <b>Waste from residues / unused products</b> | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).  |
| <b>Contaminated packaging</b>                | Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities. |

## 14. Transport information

### DOT

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

## 15. Regulatory information

|                               |   |
|-------------------------------|---|
| <b>US federal regulations</b> | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.<br>All components are on the U.S. EPA TSCA Inventory List. |
|-------------------------------|---|

### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

### CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

### SARA 304 Emergency release notification

Not regulated.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

|                          |   |
|--------------------------|---|
| <b>Hazard categories</b> | Immediate Hazard - Yes<br>Delayed Hazard - No<br>Fire Hazard - No<br>Pressure Hazard - No<br>Reactivity Hazard - No |
|--------------------------|---|

### SARA 302 Extremely hazardous substance

Not listed.

### SARA 311/312 Hazardous chemical

Yes

### SARA 313 (TRI reporting)

Not regulated.

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

#### Safe Drinking Water Act (SDWA)

Not regulated.

### US state regulations

#### US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

#### US. Massachusetts RTK - Substance List

Not regulated.

#### US. New Jersey Worker and Community Right-to-Know Act

Not listed.

#### US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

**US. Rhode Island RTK**

Not regulated.

**US. California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

| Country(s) or region        | Inventory name   | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia                   | Australian Inventory of Chemical Substances (AICS)                     | Yes                    |
| Canada                      | Domestic Substances List (DSL)   | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                    |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | No                     |
| Korea                       | Existing Chemicals List (ECL)  | Yes                    |
| New Zealand                 | New Zealand Inventory  | Yes                    |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | Yes                    |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                    |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).  
 A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision****Issue date** September-24-2015**Version #** 01

**Disclaimer** GFS Chemicals cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

**Revision Information** Product and Company Identification: Alternate Trade Names  
 Hazards Identification: US Hazard Categories  
 Composition / Information on Ingredients: Disclosure Overrides  
 Physical & Chemical Properties: Multiple Properties  
 Transport Information: Physical States  
 Regulatory Information: Risk Phrases - Labeling