

# SAFETY DATA SHEET

Date Printed: 05/19/2024

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (4N) 99.99% Copper(I) Cyanide

**Product Code:** CU-CY-04

**CAS Number:** 544-92-3

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

Acute toxicity, Oral (Category 2), H300

Acute toxicity, Inhalation (Category 2), H330

Acute toxicity, Dermal (Category 1), H310

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410



Signal word: Danger

Hazard statement(s):

H300 + H310 + H330 Fatal if swallowed, in contact with skin or if inhaled.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s):

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P262 Do not get in eyes, on skin, or on clothing.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing.  
P284 Wear respiratory protection.  
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.  
P302 + P350 + P310 IF ON SKIN: Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/ physician.  
P304 + P340 + P310 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.  
P361 Remove/Take off immediately all contaminated clothing.  
P363 Wash contaminated clothing before reuse.  
P391 Collect spillage.  
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.  
P501 Dispose of contents/ container to an approved waste disposal plant.  
Hazards not otherwise classified (HNOC) or not covered by GHS:  
Contact with acids liberates very toxic gas.

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### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances

Synonyms : Cuprous cyanide

Formula :  $\text{CCuN}$

Molecular weight : 89.56 g/mol

CAS-No. : 544-92-3

EC-No. : 208-883-6

Index-No. : 006-007-00-5

Hazardous components

Component: Copper (I) Cyanide

Classification: Acute Tox. 2; Acute Tox. 1; Aquatic Acute 1; Aquatic Chronic 1; H300 + H310 +H330, H410

Concentration: 90 - 100 %

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### **SECTION 4. FIRST AID MEASURES**

General advice:

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled:

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact:

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact:

Flush eyes with water as a precaution.

If swallowed:

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed:

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of any immediate medical attention and special treatment needed:

No data available

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## SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media:

Dry powder

Special hazards arising from the substance or mixture:

No data available

Advice for firefighters:

Wear self-contained breathing apparatus for firefighting if necessary.

Further information:

No data available

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up:

Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water.

Keep in suitable, closed containers for disposal.

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## SECTION 7. HANDLING AND STORAGE

Precautions for safe handling:

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage, including any incompatibilities:

Keep container tightly closed in a dry and well-ventilated place.

Never allow product to get in contact with water during storage. Do not store near acids.

Store under inert gas. Air sensitive.

Storage class (TRGS 510): 6.1B: Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters:

Component: Copper(I) Cyanide

CAS-No.: 544-92-3

Value: TWA / C / TWA / C / PEL / PEL

Control parameters: 5mg/m<sup>3</sup> / 5mg/m<sup>3</sup> / 1mg/m<sup>3</sup> / 4.7ppm, 5mg/m<sup>3</sup> / 1mg/m<sup>3</sup> / 5mg/m<sup>3</sup>

Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants / USA.

ACGIH Threshold Limit Values (TLV) / USA. NIOSH Recommended Exposure Limits / USA. NIOSH

Recommended Exposure Limits / California permissible exposure limits for chemical contaminants

(Title 8, Article 107) / California permissible exposure limits for chemical contaminants (Title 8, Article

107)

Exposure controls

Appropriate engineering controls:

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection:

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection:

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Form: solid

Odour No data available

Odour Threshold No data available

pH No data available

Melting point/freezing point

Melting point/range: 474 °C (885 °F)

Initial boiling point and boiling range: No data available

Flash point No data available

Evaporation rate No data available

Flammability (solid, gas) No data available

Upper/lower flammability or explosive limits: No data available

Vapour pressure No data available

Vapour density No data available

Relative density 2.92 g/cm<sup>3</sup> at 25 °C (77 °F)

Water solubility No data available

Partition coefficient: octanol/water: No data available

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Viscosity No data available

Explosive properties No data available

Oxidizing properties No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity:

No data available

Chemical stability:

Stable under recommended storage conditions.

Possibility of hazardous reactions:

No data available

Conditions to avoid:

No data available

Incompatible materials:

acids, Oxidizing agents, Bases, Nitrates, Magnesium

Hazardous decomposition products:

Hazardous decomposition products formed under fire conditions. - Nitrogen oxides (NO<sub>x</sub>), Copper oxides

Other decomposition products - No data available

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## SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

LD50 Oral - Rat - 1,265 mg/kg

No data available

Skin corrosion/irritation:

No data available

Serious eye damage/eye irritation:

No data available

Respiratory or skin sensitisation:

No data available

Germ cell mutagenicity:

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity:

No data available

Specific target organ toxicity - single exposure:

No data available

Specific target organ toxicity - repeated exposure:

No data available

Aspiration hazard:

No data available

Additional Information:

RTECS: Not available

Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been

reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis.,  
Dermatitis, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity:

No data available

Persistence and degradability:

No data available

Bioaccumulative potential:

No data available

Mobility in soil:

No data available

Results of PBT and vPvB assessment:

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects:

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods

Product:

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging:

Dispose of as unused product

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## **SECTION 14. TRANSPORT INFORMATION**

DOT (US)

UN number: 1587 Class: 6.1 Packing group: II

Proper shipping name: Copper cyanide

Reportable Quantity (RQ): 10 lbsMarine pollutant:yes

Poison Inhalation Hazard: No

IMDG

UN number: 1587 Class: 6.1 Packing group: II EMS-No: F-A, S-A

Proper shipping name: COPPER CYANIDE

Marine pollutant:yes Marine pollutant: yes

IATA

UN number: 1587 Class: 6.1 Packing group: II

Proper shipping name: Copper cyanide

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## SECTION 15. REGULATORY INFORMATION

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

Copper cyanide

CAS-No.

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### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

Copper cyanide

CAS-No.

544-92-3

### Pennsylvania Right To Know Components

Copper cyanide

CAS-No.

544-92-3

Copper cyanide

CAS-No.

544-92-3

### New Jersey Right To Know Components

Copper cyanide

CAS-No.

544-92-3

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.