SECTION 1. IDENTIFICATION

Product Identifier: (4N) 99.99% Copper(II) Acetate Monohydrate

Product Code: CU2-AC-04-C.1HYD

CAS Number: 6046-93-1

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 4), H302
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 2), H411

GHS Label elements, including precautionary statements

Signal word Danger

Hazard statement(s)
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.
Precautionary statement(s)
P260 Do not breathe dust or mist.
SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
Synonyms: Cupric acetate monohydrate
Formula: C4H6CuO4 · H2O
Molecular weight: 199.65 g/mol
CAS-No.: 6046-93-1
EC-No.: 205-553-3

SECTION 4. FIRST AID MEASURES

Description of 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
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.
In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
If swallowed
Do NOT induce vomiting. 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) and/or in section 11
Indication of any immediate medical attention and special treatment needed
SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special hazards arising from the substance or mixture
Carbon oxides, Copper oxides
Not combustible.
Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.
Further information
No data available

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas.
Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.
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. Keep in suitable, closed containers for disposal.
Reference to other sections
For disposal see section 13.

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.
For precautions see section 2.2.
Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Keep in a dry place.
Storage class (TRGS 510): 8B: Non-combustible, corrosive hazardous materials
Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Components with workplace control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>Value</th>
<th>Control Parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper di(acetate)</td>
<td>6046-93-1</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>1 mg/m3</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
</tbody>
</table>

Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
a) Appearance Form: powder, crystalline
b) Colour: dark green, transparent
c) Odour: odourless
d) pH: 5.2 - 5.5 at 20 g/l at 20 °C (68 °F)
e) Melting point/freezing point
f) Initial boiling point and boiling range (decomposition)
g) Flash point () does not flash
h) Evaporation rate No data available
i) Flammability (solid, gas)
The product is not flammable. - Flammability (solids)
j) Upper/lower flammability or explosive limits
   No data available
k) Vapour pressure No data available
l) Vapour density No data available
m) Relative density 1.88 g/cm³ at 20 °C (68 °F)
n) Water solubility 76.3 g/l at 20 °C (68 °F) - Regulation (EC) No. 440/2008, Annex, A.6 - completely soluble
o) Partition coefficient: n-octanol/water
   Not applicable for inorganic substances
p) Auto-ignition temperature
   239 °C (462 °F) - Relative self-ignition temperature for solids
q) Decomposition temperature
   No data available
r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties No data available
Other safety information
Surface tension 72 mN/m at 1.08 g/l at 21.2 °C (70.2 °F)

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
Oxidizing agents
Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Copper oxides
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity
LD₅₀ Oral - Rat - female - > 300 - 2,000 mg/kg
   (OECD Test Guideline 420)
LD₅₀ Dermal - Rat - male and female - > 2,000 mg/kg
   (OECD Test Guideline 402)
No data available
Skin corrosion/irritation
Skin - In vitro study
Result: Causes burns. - 4 h
   (OECD Test Guideline 431)
Serious eye damage/eye irritation
Eyes - Rabbit
Result: Causes serious eye damage. - 21 d
(OECD Test Guideline 405)
conjunctivitis Risk of corneal clouding.
Respiratory or skin sensitisation
Maximisation Test - Guinea pig
Does not cause skin sensitisation.
(OECD Test Guideline 406)
Germ cell mutagenicity
Ames test
Salmonella typhimurium
Result: negative
OECD Test Guideline 486
Rat - male - Liver cells
Result: negative
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
Acute oral toxicity - Nausea, Vomiting
Acute inhalation toxicity - Possible damages: mucosal irritations
Specific target organ toxicity - repeated exposure
No data available
Aspiration hazard
No data available
Additional Information
Repeated dose toxicity - Rat - male and female - Inhalation - 28 Days
(in analogy to similar products)
RTECS: AG3500000
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., Cough, Shortness of breath, Headache, Nausea, Vomiting, Gastrointestinal disturbance, Blood disorders, Liver injury may occur., Damage to the lungs.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Systemic effects:
Tiredness
After a latency period:
Metal-fume fever after inhalation of large quantities.
Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.
Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence
SECTION 12. ECOLOGICAL INFORMATION

Toxicity
Toxicity to fish flow-through test LC50 - Pimephales promelas (fathead minnow) - 0.39 mg/l - 96 h
(US-EPA)
Remarks: (in analogy to similar products)
Persistence and degradability
The methods for determining the biological degradability are not applicable to inorganic substances.
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.
Discharge into the environment must be avoided.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Product
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. Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging
Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

DOT (US)
UN number: 1759 Class: 8 Packing group: II
Proper shipping name: Corrosive solids, n.o.s. (Copper di(acetate))
Reportable Quantity (RQ): 100 lbs
Poison Inhalation Hazard: No
IMDG
UN number: 1759 Class: 8 Packing group: II EMS-No: F-A, S-B
Proper shipping name: CORROSIVE SOLID, N.O.S. (Copper di(acetate))
Marine pollutant: yes
IATA
UN number: 1759 Class: 8 Packing group: II
Proper shipping name: Corrosive solid, n.o.s. (Copper di(acetate))

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 di(acetate)
CAS-No. 6046-93-1
Revision Date 1993-02-16

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components
Copper di(acetate) CAS-No. 6046-93-1
Revision Date 1993-02-16

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 1997-2019 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.