




<a href="#">Copper(II) Nitrate Hemi(pentahydrate)</a>		<a href="#">Pricing &gt;</a>
Linear Formula	2[Cu(NO <sub>3</sub> ) <sub>2</sub> • 2.5H <sub>2</sub> O]	
Pubchem CID	167780	
MDL Number	MFCD02253001	
EC No.	221-838-5	
IUPAC Name	dicopper; tetranitrate; pentahydrate	
Beilstein/Reaxys No.	N/A	
SMILES	[N+](=O)([O-])[O-].[N+](=O)([O-])[O-].[N+](=O)([O-])[O-].[N+](=O)([O-])[O-].O.O.O.O.O.[Cu+2].[Cu+2]	
Inchl Identifier	InChI=1S/2Cu.4NO3.5H2O/c;;4*2-1(3)4;;;;/h;;;;;5*1H2/q2*+2;4*-1;;;;	
Inchl Key	IZDJJEMZQQZQQQ-UHFFFAOYSA-N	
Signal Word	Danger	
Hazard Statements	H272-H302-H315-H318-H410	
Hazard Codes	O, Xn, N	
Precautionary Statements	P210-P221-P303+P361+P353-P305+P351+P338-P405-P501	
Risk Codes	8-22-38-41-50/53	
Safety Statements	26-39-60-61	
RTECS Number	QU7400000	
Transport Information	UN 3085 5.1/PG 2	
WGK Germany	3	
GHS Pictograms	<a href="#">GHS03 Oxidizer</a>	
		
	<a href="#">GHS05 Corrosive</a>	
		
	<a href="#">GHS07 Exclamation Point</a>	
		

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# SAFETY DATA SHEET

Date Accessed: 04/23/2024

**Date Revised:** 01/15/2022

## SECTION 1. IDENTIFICATION

**Product Identifiers:** All applicable American Elements product codes for CAS #19004-19-4

**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:  
Domestic, North America +1 800-424-9300  
International +1 703-527-3887

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## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture  
Classification according to Regulation (EC) No 1272/2008

GHS03 Flame over circle

Ox. Sol. 2 H272 May intensify fire; oxidizer.

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

C; Corrosive

R34: Causes burns.

Xn; Harmful

R22: Harmful if swallowed.

O; Oxidizing

R8: Contact with combustible material may cause fire.

Information concerning particular hazards for human and environment:

N/A

Hazards not otherwise classified

No data available

Label elements

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labeled according to the CLP regulation.

Hazard pictograms



GHS03 GHS05 GHS07

Signal word: Danger

Hazard statements

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

Precautionary statements

P221 Take any precaution to avoid mixing with combustibles.

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.  
WHMIS classification  
C - Oxidizing materials  
D2B - Toxic material causing other toxic effects  
E - Corrosive material  
Classification system  
HMIS ratings (scale 0-4)  
(Hazardous Materials Identification System)  
HEALTH  
FIRE  
REACTIVITY  
3  
0  
2  
Health (acute effects) = 3  
Flammability = 0  
Physical Hazard = 2  
Other hazards  
Results of PBT and vPvB assessment  
PBT:  
N/A  
vPvB:  
N/A

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

Substances  
CAS No. / Substance Name:  
19004-19-4 Copper(II) nitrate hemi(pentahydrate)  
Identification number(s):  
EC number:  
221-838-5

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

Description of first aid measures  
General information  
Immediately remove any clothing soiled by the product.

If inhaled:

Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

In case of skin contact:

Immediately wash with soap and water; rinse thoroughly.

Seek immediate medical advice.

In case of eye contact:

Rinse opened eye for several minutes under running water. Consult a physician.

If swallowed:

Seek medical treatment.

Information for doctor

Most important symptoms and effects, both acute and delayed

Causes severe skin burns.

Causes serious eye damage.

Indication of any immediate medical attention and special treatment needed

No data available

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media

Suitable extinguishing agents

Carbon dioxide, extinguishing powder or water spray.

Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents

Halocarbon extinguisher

Special hazards arising from the substance or mixture

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

If this product is involved in a fire, the following can be released:

Nitrogen oxides (NO<sub>x</sub>)

Metal oxide fume

Advice for firefighters

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Keep unprotected persons away.

Ensure adequate ventilation  
Environmental precautions:  
Do not allow material to be released to the environment without official permits.  
Do not allow product to enter drains, sewage systems, or other water courses.  
Do not allow material to penetrate the ground or soil.  
Methods and materials for containment and cleanup:  
Use neutralizing agent.  
Dispose of contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
Prevention of secondary hazards:  
Acts as an oxidizing agent on organic materials such as wood, paper and fats  
Keep away from combustible material.  
Reference to other sections  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

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## **SECTION 7. HANDLING AND STORAGE**

Handling  
Precautions for safe handling  
Handle under dry protective gas.  
Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation at the workplace.  
Information about protection against explosions and fires:  
Substance/product can reduce the ignition temperature of flammable substances.  
This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.  
Conditions for safe storage, including any incompatibilities  
Requirements to be met by storerooms and receptacles:  
No special requirements.  
Information about storage in one common storage facility:  
Store away from flammable substances.  
Store away from reducing agents.  
Do not store with organic materials.  
Store away from metal powders.  
Store away from water/moisture.  
Store away from oxidizing agents  
Further information about storage conditions:  
Store under dry inert gas.  
This product is hygroscopic.

Keep container tightly sealed.  
Store in cool, dry conditions in well-sealed containers.  
Protect from humidity and water.  
Specific end use(s)  
No data available

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

None.

Additional information:

No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Inspect gloves prior to use.

Suitability of gloves should be determined both by material and quality, the latter of which may vary by manufacturer.

Penetration time of glove material (in minutes)

No data available

Eye protection:

Tightly sealed goggles

Full face protection

Body protection:

Protective work clothing.

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## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Information on basic physical and chemical properties

Appearance:

Form: Crystalline solid

Color: Blue

Odor: Odorless

Odor threshold: No data available.

pH: N/A

Melting point/Melting range:  $\approx 115\text{ }^{\circ}\text{C}$  ( $\approx 239\text{ }^{\circ}\text{F}$ )

Boiling point/Boiling range:  $170\text{ }^{\circ}\text{C}$  ( $338\text{ }^{\circ}\text{F}$ ) (dec)

Sublimation temperature / start: No data available

Flammability (solid, gas)

Contact with combustible material may cause fire.

Ignition temperature: No data available

Decomposition temperature: No data available

Autoignition: No data available.

Danger of explosion: No data available.

Explosion limits:

Lower: No data available

Upper: No data available

Vapor pressure: N/A

Density at  $20\text{ }^{\circ}\text{C}$  ( $68\text{ }^{\circ}\text{F}$ ):  $2.32\text{ g/cm}^3$  ( $19.36\text{ lbs/gal}$ )

Relative density

No data available.

Vapor density

N/A

Evaporation rate

N/A

Solubility in / Miscibility with Water at  $0\text{ }^{\circ}\text{C}$  ( $32\text{ }^{\circ}\text{F}$ ):

$1378\text{ g/l}$  Soluble

Partition coefficient (n-octanol/water): No data available.

Viscosity:

Dynamic: N/A

Kinematic: N/A

Other information

No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity

May intensify fire; oxidizer.

Chemical stability

Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions

Reacts with strong oxidizing agents

Reacts with reducing agents

Reacts with flammable substances

Conditions to avoid

No data available

Incompatible materials:

Reducing agents  
Water/moisture  
Oxidizing agents  
Flammable substances  
Organic materials  
Metal powders  
Hazardous decomposition products:  
Nitrogen oxides  
Metal oxide fume

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects

Acute toxicity:

Harmful if swallowed.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

The following RTECS statement/statements refer to the anhydrous compound:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

LD/LC50 values that are relevant for classification:

The following value/values refer to the anhydrous compound:

Oral LD50 794 mg/kg (rat)

Skin irritation or corrosion:

Causes severe skin burns.

Eye irritation or corrosion:

Causes serious eye damage.

Sensitization:

No sensitizing effects known.

Germ cell mutagenicity:

No effects known.

Carcinogenicity:

EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.

Reproductive toxicity:

No effects known.

Specific target organ system toxicity - repeated exposure:

No effects known.

Specific target organ system toxicity - single exposure:

No effects known.

Aspiration hazard:

No effects known.

Subacute to chronic toxicity:

No effects known.

Additional toxicological information:



To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity

Aquatic toxicity:

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Additional ecological information:

Do not allow material to be released to the environment without official permits.

Do not allow undiluted product or large quantities to reach groundwater, water courses, or sewage systems.

Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT:

N/A

vPvB:

N/A

Other adverse effects

No data available

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods

Recommendation

Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

Recommended cleansing agent:

Water, if necessary with cleansing agents

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## **SECTION 14. TRANSPORT INFORMATION**

UN-Number

DOT, IMDG, IATA

UN3085

UN proper shipping name

DOT

Oxidizing solid, corrosive, n.o.s. (Copper(II) nitrate

hemi(pentahydrate))  
IMDG, IATA  
OXIDIZING SOLID, CORROSIVE, N.O.S. (Copper(II)  
nitrate hemi(pentahydrate))  
Transport hazard class(es)  
DOT  
Class  
5.1 Oxidising substances.  
Label  
5.1+8  
Class  
5.1 (OC2) Oxidizing substances  
Label  
5.1+8  
IMDG, IATA  
Class  
5.1 Oxidising substances.  
Label  
5.1+8  
Packing group  
DOT, IMDG, IATA  
III  
Environmental hazards: N/A  
Special precautions for user  
Warning: Oxidizing substances  
Transport in bulk according to Annex II of  
MARPOL73/78 and the IBC Code  
N/A  
Transport/Additional information: DOT  
Marine Pollutant (DOT): No  
UN "Model Regulation":  
UN3085, Oxidizing solid, corrosive, n.o.s. (Copper(II)  
nitrate hemi(pentahydrate)), 5.1 (8), III

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## **SECTION 15. REGULATORY INFORMATION**

Safety, health and environmental  
regulations/legislation specific for the substance or  
mixture  
National regulations  
All components of this product are listed in the U.S.  
Environmental Protection Agency Toxic Substances  
Control Act Chemical substance Inventory.  
All components of this product are listed on the  
Canadian Domestic Substances List (DSL).  
SARA Section 313 (specific toxic chemical listings)  
19004-19-4 Copper(II) nitrate hemi(pentahydrate)  
California Proposition 65  
Prop 65 - Chemicals known to cause cancer  
Substance is not listed.  
Prop 65 - Developmental toxicity  
Substance is not listed.

Prop 65 - Developmental toxicity, female  
Substance is not listed.  
Prop 65 - Developmental toxicity, male  
Substance is not listed.  
Information about limitation of use:  
For use only by technically qualified individuals.  
This product is subject to the reporting requirements  
of section 313 of the Emergency Planning and  
Community Right to Know Act of 1986 and  
40CFR372.  
Other regulations, limitations and prohibitive  
regulations  
Substance of Very High Concern (SVHC) according to  
the REACH Regulations (EC) No. 1907/2006.  
Substance is not listed.  
The conditions of restrictions according to Article 67  
and Annex XVII of the Regulation (EC) No 1907/2006  
(REACH) for the manufacturing, placing on the market  
and use must be observed.  
Substance is not listed.  
Annex XIV of the REACH Regulations (requiring  
Authorisation for use)  
Substance is not listed.  
REACH - Pre-registered substances  
Substance is listed.  
Chemical safety assessment:  
A Chemical Safety Assessment has not been carried  
out.

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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.