

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (4N) 99.99% Copper Molybdate Sputtering Target

**Product Code:** CU-MOAT-04-ST

**CAS Number:** 13767-34-5

**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 in accordance with 29 CFR 1910 (OSHA HCS)

GHS08 Health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

Hazards not otherwise classified

No data available

GHS label elements

GHS label elements, including precautionary statements

Hazard pictograms



GHS07 GHS08

Signal word

Warning

Hazard statements

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P260

Do not breathe dust/fume/gas/mist/vapors/spray.

P261

Avoid breathing dust/fume/gas/mist/vapors/spray.

P280

Wear protective gloves/protective clothing/eye protection/face protection.

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

D2A - Very toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

Health (acute effects) = 1

Flammability = 0

Physical Hazard = 0

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:

13767-34-5 Copper molybdenum oxide

Identification number(s):

EC number:

237-378-3

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## SECTION 4. FIRST AID MEASURES

Description of first aid measures

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

No data available

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

Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture

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

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.

Methods and materials for containment and cleanup:

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Prevention of secondary hazards:

No special measures required.

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

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Prevent formation of dust.

Information about protection against explosions and fires:

The product is not flammable

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:

Not required.

Further information about storage conditions:  
Keep container tightly sealed.  
Store in cool, dry conditions in well-sealed containers.  
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:

Copper

mg/m<sup>3</sup>

ACGIH TLV 1 (dust, mist)

0.2 (fume)

Austria MAK 1

0.1 (fume)

Belgium TWA 0.2 (fume)

1 (dust)

Denmark TWA 0.1

Finland TWA 0.2 (fume)

1 (dust)

France VME 0.1 (fume)

1 (dust)

1; 2-STEEL (dust)

Germany MAK 0.1 (fume)

1 (dust)

Hungary TWA 0.2; 0.4-STEEL (dust)

Korea TLV 1 (dust, mist)

0.2 (fume)

Netherlands MAC-TGG 1 (dust)

Norway TWA 0.05

0.1 (fume)

Poland TWA 0.1; 0.3-STEEL (fume)

1; 2-STEEL (dust)

Russia 1-STEEL (dust)

Sweden NGV 0.2 (resp. dust)

1 (total dust)

Switzerland MAK-W 0.1; 0.2-KZG-W (fume)

1; 1-KZG-W

United Kingdom TWA 0.2 (fume)

1; 2-STEEL (dust, mist)

; 3-STEEL

USA PEL TWA 0.1 (fume)

1 (dust, mist)

Copper

mg/m<sup>3</sup>

ACGIH TLV 1 (dust, mist); 0.2 (fume)

Austria MAK 1

0.1 (fume)

Belgium TWA 0.2 (fume); 1 (dust)

Denmark TWA 0.1  
Finland TWA 0.2 (fume); 1 (dust)  
France VME 0.2 (fume); 1 (dust)  
1; 2-STEL (dust)  
Germany MAK 0.1 (fume); 1 (dust)  
Hungary TWA 0.2; 0.4-STEL (dust)  
Netherlands MAC-TGG 1 (dust)  
Norway TWA 0.05  
0.1 (fume)  
Poland TWA 0.1; 0.3-STEL (fume)  
1; 2-STEL (dust)  
Russia 1-STEL (dust)  
Sweden NGV 0.2 (resp. dust); 1 (total dust)  
Switzerland MAK-W 0.1; 0.2-KZG-W (fume)  
1; 1-KZG-W  
United Kingdom TWA 0.2 (fume)  
1; 2-STEL (dusts and mists as Cu)  
1; 3-STEL

USA PEL 0.1 (fume, dusts & mists)  
Molybdenum and compounds (as Mo)  
mg/m<sup>3</sup>

ACGIH TLV 5  
Austria MAK 15  
Belgium TWA 5  
Denmark TWA 5  
Finland TWA 5  
France VME 5  
Germany MAK 5  
Netherlands MAC-TGG 5  
Sweden NGV 10 (total dust)  
5 (respirable dust)  
Switzerland TWA 5  
United Kingdom TWA 10; 20-STEL  
USA PEL 5

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.

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)

Not determined

Eye protection:

Safety glasses  
Body protection:  
Protective work clothing.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Powder

Color: Green

Odor: Odorless

Odor threshold: Not determined.

pH: N/A

Melting point/Melting range: ca. 5 °C (ca. 41 °F)

Boiling point/Boiling range: Not determined

Sublimation temperature / start: Not determined

Flash point: N/A

Flammability (solid, gas)

Not determined.

Ignition temperature: Not determined

Decomposition temperature: Not determined

Autoignition: Not determined.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower: Not determined

Upper: Not determined

Vapor pressure: N/A

Density at 20 °C (68 °F): 3.4 g/cm<sup>3</sup> (28.373 lbs/gal)

Relative density

Not determined.

Vapor density

N/A

Evaporation rate

N/A

Solubility in Water (H<sub>2</sub>O): Insoluble

Partition coefficient (n-octanol/water): Not determined.

Viscosity:

Dynamic: N/A

Kinematic: N/A

Other information

No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity

No data available

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

No dangerous reactions known  
Conditions to avoid  
No data available  
Incompatible materials:  
No data available  
Hazardous decomposition products:  
Metal oxide fume

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects

Acute toxicity:

No effects known.

LD/LC50 values that are relevant for classification:

No data

Skin irritation or corrosion:

Irritant to skin and mucous membranes.

Eye irritation or corrosion:

Causes serious eye irritation.

Sensitization:

No sensitizing effects known.

Germ cell mutagenicity:

No effects known.

Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity:

No effects known.

Specific target organ system toxicity - repeated exposure:

May cause damage to organs through prolonged or repeated exposure.

Specific target organ is not known.

Specific target organ system toxicity - single exposure:

May cause respiratory irritation.

Aspiration hazard:

No effects known.

Subacute to chronic toxicity:

Acute molybdenum poisoning may cause severe gastrointestinal irritation, diarrhea, coma and death from cardiac failure.

Chronic molybdenum poisoning in laboratory animals has caused loss of weight, anorexia, anemia, deficient lactation, male sterility, osteoporosis and bone joint abnormalities.

Copper compounds may be irritating to the skin, eyes and respiratory tract. They may cause metal fume fever, hemolysis of the red blood cells and injury to the liver, lungs, kidneys and pancreas.

Ingestion may also cause vomiting, gastric pain, dizziness, anemia, cramps, convulsions, shock, coma and death.

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.

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## **SECTION 14. TRANSPORT INFORMATION**

Not a hazardous material for transportation.

UN-Number

DOT, IMDG, IATA

None

UN proper shipping name

DOT, IMDG, IATA

None

Transport hazard class(es)

DOT, ADR, IMDG, IATA

Class

None

Packing group

DOT, IMDG, IATA

None

Environmental hazards:

N/A

Special precautions for user

N/A



Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

N/A

Transport/Additional information:

Not dangerous according to the above specifications.

DOT

Marine Pollutant (DOT):

No

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## SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS GHS label elements, including precautionary statements

Hazard pictograms

GHS07

GHS08

Signal word

Warning

Hazard statements

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Precautionary statements

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Wear protective gloves/protective clothing/eye protection/face protection.

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.

National regulations

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only.

This product must be used by or directly under the supervision of a technically qualified individual as defined by TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.

SARA Section 313 (specific toxic chemical listings)

13767-34-5 Copper molybdenum oxide

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 contains copper and 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.

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.