

Safety Data Sheet

Material Name: Tungsten-Copper Powder

*** Section 1 - Product and Company Identification ***

Manufacturer Information

Ametek Specialty Metal Products
21 Toelles Road
Wallingford, CT 06492

Phone: 203-265-6731

Emergency # 800-424-9300 Chemtrec

*** Section 2 - Hazards Identification ***

GHS Classification:

Serious eye damage/eye irritation - Category 2B
Specific target organ toxicity - Single exposure - Category 3 (respiratory system)
Specific target organ toxicity - Repeated exposure - Category 1 (liver)
Hazardous to the aquatic environment - Chronic - Category 4

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

Warning

Hazard Statements

Causes eye irritation
May cause respiratory irritation
Causes damage to organs through prolonged or repeated exposure (liver)

Precautionary Statements

Prevention

Do not breathe dust/fume/gas/mist/vapours/spray
Use only outdoors or in a well-ventilated area
Wash thoroughly after handling
Do not eat, drink, or smoke when using this product
Avoid release to the environment

Response

Call a POISON CENTER or doctor/physician if you feel unwell
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical advice/attention.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms call a POISON CENTER or doctor/physician.

Storage

Store in a well-ventilated place
Keep container tightly closed
Store locked up

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Safety Data Sheet

Material Name: Tungsten-Copper Powder

*** Section 3 - Composition / Information on Ingredients ***

CAS #	Component	Percent
7440-33-7	Tungsten	74-76
7440-50-8	Copper	24-26

*** Section 4 - First Aid Measures ***

First Aid: Eyes

Lift eyelids and flush immediately with flooding amounts of water for at least 15 minutes. Do not allow the victim to rub his/her eyes or keep them shut. Consult a physician or ophthalmologist if all material cannot be removed or if there is continuing irritation.

First Aid: Skin

Remove clothing around affected area. Rinse away loose material and wash affected area with soap and water. If there is a severe skin reaction or reddened or blistered skin, consult a physician.

First Aid: Ingestion

Never give anything by mouth to an unconscious or convulsing person. Contact a poison control center with information from this SDS and the Technical Data Sheet on the composition of the material ingested. Unless the poison control center advises otherwise, give the person one or two glasses of water, then induce vomiting. After first aid, have the person see a physician for follow up care.

First Aid: Inhalation

Move the person to fresh air and support breathing as required. Consult a physician if victim has continued difficulty breathing.

*** Section 5 - Fire Fighting Measures ***

General Fire Hazards

See Section 9 for Flammability Properties.
Powder may burn. Dust is an explosion hazard.

Hazardous Combustion Products

Toxic metal oxides, carbon and nitrogen oxides may be produced during a fire involving metal alloys.

Extinguishing Media

Use dry sand, dry dolomite, or dry graphite powder or other dry chemical extinguishing agent formulated for metal fires.

Unsuitable Extinguishing Media

Do not use water or halon.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective gear. Do not allow runoff from fire fighting to enter roadways or sewers.

*** Section 6 - Accidental Release Measures ***

Recovery and Neutralization

Collect spilled material and place in sealed containers for reclamation or disposal.

Materials and Methods for Clean-Up

Use clean up measures that minimize dust. Avoid inhalation of dust. Remove sources of heat or ignition as dust clouds can burn or explode.

Emergency Measures

Isolate area. Keep unnecessary personnel away.

Personal Precautions and Protective Equipment

Wear appropriate protective clothing and respiratory protection for the situation.

Environmental Precautions

Released powder should be disposed of in an appropriate fashion. Caution should be taken to prevent entrance of powder to roadways or sewers.

Safety Data Sheet

Material Name: Tungsten-Copper Powder

Prevention of Secondary Hazards

None

*** Section 7 - Handling and Storage ***

Handling Procedures

Use local exhaust ventilation to protect against dust and fume inhalation. If workers are exposed to dust provide appropriate respiratory, eye, and skin protection. An eye wash station should be readily available to areas of use.

Storage Procedures

Store in a closed container when possible to prevent accidental dust generation and to prevent possible product contamination. Protect containers from physical damage. Guard against dust accumulation and dust becoming airborne.

Incompatibilities

Keep dry and isolated from acids, caustics, halogenated compounds, and oxidizers. Do not store near combustible materials.

*** Section 8 - Exposure Controls / Personal Protection ***

A: Component Exposure Limits

Tungsten (7440-33-7)

ACGIH: 5 mg/m3 TWA
10 mg/m3 STEL
OSHA: 5 mg/m3 TWA
10 mg/m3 STEL
NIOSH: 5 mg/m3 TWA
10 mg/m3 STEL

Copper (7440-50-8)

ACGIH: 0.2 mg/m3 TWA (fume)
OSHA: 0.1 mg/m3 TWA (dust, fume, mist, as Cu)
NIOSH: 1 mg/m3 TWA (dust and mist); 0.1 mg/m3 TWA (fume)

Engineering Measures

Where feasible, enclose processes to prevent dust dispersion into the work area. Provide local exhaust when possible, and general ventilation as necessary, to keep airborne concentrations below exposure limits and as low as possible.

Personal Protective Equipment: Respiratory

If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

Personal Protective Equipment: Hands

Use impervious gloves such as neoprene, nitrile, or rubber for hand protection.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes

Wear safety glasses with side shields and/or goggles as necessary to prevent dust from entering eyes.

Personal Protective Equipment: Skin and Body

Use body protection appropriate for task.

*** Section 9 - Physical & Chemical Properties ***

Safety Data Sheet

Material Name: Tungsten-Copper Powder

Appearance:	Fine gray powder	Odor:	None
Physical State:	Solid	pH:	NA
Vapor Pressure:	ND	Vapor Density:	ND
Boiling Point:	ND	Melting Point:	ND
Solubility (H2O):	Insoluble	Specific Gravity:	ND
Evaporation Rate:	ND	VOC:	ND
Octanol/H2O Coeff.:	ND	Flash Point:	NA
Flash Point Method:	NA	Upper Flammability Limit (UFL):	NA
Lower Flammability Limit (LFL):	NA	Burning Rate:	NA
Auto Ignition:	NA		

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Contamination from other materials.

Incompatible Products

Reacts with strong acids and caustics to form flammable and explosive hydrogen gas. Contact with sulfur may cause evolution of heat. Contact with halogenated compounds and oxidizers may produce violent reactions and fires.

Hazardous Decomposition Products

Toxic metal oxides and carbon and nitrogen oxides may be produced during a fire involving metal alloys.

*** Section 11 - Toxicological Information ***

Acute Toxicity

Component Analysis - LD50/LC50

No LD50/LC50's are available for this product's components.

Potential Health Effects: Skin Corrosion Property/Stimulativeness

No potential health effects anticipated.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Causes eye irritation.

Potential Health Effects: Ingestion

Ingestion of small amounts may occur through eating, smoking, or other hand to mouth contact. Ingestion of small amounts is unlikely to cause significant health effects, but alloys containing high concentrations of copper may cause nausea, vomiting, stomach pain, and diarrhea. Ingestion of large amounts of copper dust can lead to gastrointestinal tract ulceration, jaundice, and kidney damage.

Potential Health Effects: Inhalation

Inhalation of metal powder may cause chills, fever, sweating, nausea, and cough (symptoms of metal fume fever). Metal fume fever symptoms typically begin within 4 to 12 hours after the initial exposure and lasts from approximately 24 hours without causing permanent damage.

Respiratory Organs Sensitization/Skin Sensitization

May cause nose and throat irritation, metallic taste, difficulty breathing, wheezing, and chest pain. Some individuals may become sensitized from repeated contact with metal powders, especially alloys containing copper, nickel, and vanadium.

Generative Cell Mutagenicity

This product is not reported to produce mutagenic effects in humans.

Safety Data Sheet

Material Name: Tungsten-Copper Powder

Carcinogenicity

A: General Product Information

Not suspected of causing cancer.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Reproductive Toxicity

This product is not reported to cause reproductive effects in humans.

Specified Target Organ General Toxicity: Single Exposure

May cause respiratory irritation.

Specified Target Organ General Toxicity: Repeated Exposure

May cause damage to organs through prolonged or repeated exposure (liver).

Aspiration Respiratory Organs Hazard

None

* * * Section 12 - Ecological Information * * *
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Ecotoxicity

A: General Product Information

Data not available for metal and metal powder.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Copper (7440-50-8)

Test & Species

96 Hr LC50 Pimephales promelas	0.0068 - 0.0156 mg/L	Conditions
96 Hr LC50 Pimephales promelas	<0.3 mg/L [static]	
96 Hr LC50 Pimephales promelas	0.2 mg/L [flow-through]	
96 Hr LC50 Oncorhynchus mykiss	0.052 mg/L [flow-through]	
96 Hr LC50 Lepomis macrochirus	1.25 mg/L [static]	
96 Hr LC50 Cyprinus carpio	0.3 mg/L [semi-static]	
96 Hr LC50 Cyprinus carpio	0.8 mg/L [static]	
96 Hr LC50 Poecilia reticulata	0.112 mg/L [flow-through]	
72 Hr EC50 Pseudokirchneriella subcapitata	0.0426 - 0.0535 mg/L [static]	
96 Hr EC50 Pseudokirchneriella subcapitata	0.031 - 0.054 mg/L [static]	
48 Hr EC50 Daphnia magna	0.03 mg/L [Static]	

Persistence/Degradability

Metal powders may cause ecological damage through silting or sedimentation effect in water depriving organisms of habitat and mobility, and/or fouling of gills, lungs and skin thus limiting oxygen uptake.

Bioaccumulation

Metal powders in water or soil may form metal oxides or other metal compounds that could become bioavailable and harm aquatic or terrestrial organisms.

Mobility in Soil

Metal powder would be relatively immobile in soils but some metal compounds may be transported with ground water.

Safety Data Sheet

Material Name: Tungsten-Copper Powder

*** Section 13 - Disposal Considerations ***

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** Section 14 - Transportation Information ***

Component Marine Pollutants

This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

Component	CAS #	
Copper	7440-50-8	DOT regulated severe marine pollutant (powder)

IATA Information

Shipping Name: Environmentally Hazardous Substance Solid, n.o.s.

UN #: 3077 **Hazard Class:** 9 **Packing Group:** III

ICAO Information

Shipping Name: Environmentally Hazardous Substance Solid, n.o.s.

UN #: 3077 **Hazard Class:** 9 **Packing Group:** III

IMDG Information

Shipping Name: Environmentally Hazardous Substance Solid, n.o.s.

UN #: 3077 **Hazard Class:** 9 **Packing Group:** III

*** Section 15 - Regulatory Information ***

Regulatory Information

US Federal Regulations

A: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Copper (7440-50-8)

SARA 313: 1.0 % de minimis concentration

CERCLA: 5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)

B: Component Marine Pollutants

This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

Component	CAS #	
Copper	7440-50-8	DOT regulated severe marine pollutant (powder)

State Regulations

Safety Data Sheet

Material Name: Tungsten-Copper Powder

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Tungsten	7440-33-7	Yes	Yes	Yes	Yes	Yes	Yes
Copper	7440-50-8	Yes	Yes	Yes	Yes	Yes	Yes

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Tungsten	7440-33-7	1 %
Copper	7440-50-8	1 %

Additional Regulatory Information

Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Tungsten	7440-33-7	Yes	DSL	EINECS
Copper	7440-50-8	Yes	DSL	EINECS

* * * Section 16 - Other Information * * *

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

Literature References

None

End of Sheet