

Safety Data Sheet

Material Name: Pfinodal Powder
Products: 377, 388, C72900, C72650

*** 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:

Oxidizing Solids - Category 3
Combustible Dust
Skin Corrosion/Irritation - Category 2
Eye Damage/Irritation - Category 2B
Respiratory Sensitization - Category 1
Skin Sensitization - Category 1
Carcinogenicity - Category 1B
Specific Target Organ Toxicity (Single Exposure) - Category 3
Specific Target Organ Toxicity (Repeated Exposure) - Category 1
Hazardous to the Aquatic Environment Acute Hazard - Category 1

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

Danger

Hazard Statements

May intensify fire; oxidizer.
May form combustible dust concentrations in air.
Causes eye and skin irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause cancer.
May cause respiratory irritation.
Causes damage to lungs through prolonged or repeated exposure.
Very toxic to aquatic life

Precautionary Statements

Prevention

Keep away from heat.
Keep/Store away from clothing/combustible materials.
Take precaution to avoid mixing with combustibles.

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Wear protective gloves/protective clothing/eye protection/face protection.
Wash thoroughly after handling
Do not breathe dusts.
Use only outdoors or in a well-ventilated area.
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace.
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Avoid release to the environment

Response

In case of fire: Use dry sand, dry dolomite, or dry graphite powder or other dry chemical extinguishing agent formulated for metal fires to extinguish.
IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
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: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms call a doctor/physician.
Get medical advice/attention if you feel unwell.
Collect spillage.

Storage

Store locked up

Disposal

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

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

CAS #	Component	Percent
7440-50-8	Copper	75-90
7440-02-0	Nickel	15
7440-31-5	Tin	8

* * * 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.

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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. Fire may release toxic metal oxide fume. If without risk, remove material from fire area. Tin forms combustibles in the form of dust when exposed to heat or by spontaneous chemical reaction with BR2, BrF3, LI2, ClF3, Cu(NO3), K2O2 and S. This powder oxidizes, especially in the presence of moisture. Fires and explosions can occur when metallic tin is in contact with turpentine.

Hazardous Combustion Products

Toxic metal oxides, carbon and nitrogen oxides may be produced during a fire involving metal alloys. Alloys with nickel may also produce toxic nickel carbonyl.

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.

* * * 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

Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter, or similar clean up measure that minimize dust, and place in a closed container for disposal. Avoid inhalation of dust. Remove sources of heat (use non-sparking tools only) or ignition as dust clouds can burn or explode. Recycle or dispose of material according to local, state, and federal regulations.

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

None

Prevention of Secondary Hazards

None

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*** 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 possible product contamination. Protect containers from physical damage. Area should be well ventilated to guard against dust accumulation and dust becoming airborne. Avoid welding in storage area so as not to ignite flammable dusts. Protect against electrostatic charges.

Incompatibilities

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

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

Component Exposure Limits

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)

Nickel (7440-02-0)

ACGIH: 1.5 mg/m3 TWA (inhalable fraction)
OSHA: 1 mg/m3 TWA
NIOSH: 0.015 mg/m3 TWA

Tin (7440-31-5)

ACGIH: 2 mg/m3 TWA
OSHA: 2 mg/m3 TWA
NIOSH: 2 mg/m3 TWA

Engineering Measures

Where feasible, enclose processes to prevent dust dispersion into the work area. Provide local exhaust with a minimum face velocity of 60 fpm.

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.

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

Appearance:	Red 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:	8.94 g/cc
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

Heat, dusting.

Incompatible Products

Nickel reacts with strong acids to produce hydrogen gas. Copper is incompatible with: strong acids, bromates, strong bases, acetylene, acetaldehyde, magnesium, chlorates and iodates. Tin is incompatible with: carbon tetrachloride + water, disulfur dichloride, bromide, bromine trifluoride, chlorine trifluoride, chlorine, iodine bromide, copper (II) nitrate, fluorine, iodine heptafluoride, ammonium nitrate, potassium dioxide, sodium peroxide, sulfur, tellurium, molten tin + water, concentrated acids, oxidants.

Hazardous Decomposition Products

Toxic metal oxides and carbon and nitrogen oxides may be produced during a fire involving metal alloys. Copper may produce nitrogen oxide if reacted with nitric acid and/or copper fumes. If Nickel contacts acids, it may release hydrogen gas that is flammable and explosive.

*** Section 11 - Toxicological Information ***

Acute Toxicity

Component Analysis - LD50/LC50

Nickel (7440-02-0)

Oral LD50 Rat >9000 mg/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Causes skin irritation

Potential Health Effects: Eye Critical Damage/ Stimulativeness

May cause eye irritation; damage the cornea, and/or conjunctivitis.

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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, however vomiting and diarrhea has been noted in cases with copper.

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. Rare cases of asthma have been reported in individuals exposed to some forms of particulates containing nickel. May cause allergic skin reaction.

Generative Cell Mutagenicity

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

Carcinogenicity

A: General Product Information

May cause cancer.

B: Component Carcinogenicity

Nickel (7440-02-0)

ACGIH: A5 - Not Suspected as a Human Carcinogen

NIOSH: potential occupational carcinogen

NTP: Reasonably Anticipated To Be A Human Carcinogen (Possible Select Carcinogen)

IARC: Monograph 49 [1990]; Supplement 7 [1987] (Group 2B (possibly carcinogenic to humans))

Reproductive Toxicity

This product is not reported to have any reproductive toxicity effects.

Specified Target Organ General Toxicity: Single Exposure

May cause respiratory irritation.

Specified Target Organ General Toxicity: Repeated Exposure

Causes damage to lungs through prolonged or repeated exposure.

Aspiration Respiratory Organs Hazard

None

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

Powders and dusts are very toxic to aquatic life.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Copper (7440-50-8)

Test & Species

96 Hr LC50 Pimephales promelas

0.0068 - 0.0156

mg/L

96 Hr LC50 Pimephales promelas

<0.3 mg/L [static]

Conditions

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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]

Nickel (7440-02-0)

Test & Species

	Conditions
96 Hr LC50 Brachydanio rerio	>100 mg/L
96 Hr LC50 Cyprinus carpio	1.3 mg/L [semi-static]
96 Hr LC50 Cyprinus carpio	10.4 mg/L [static]
72 Hr EC50 Pseudokirchneriella subcapitata	0.18 mg/L
96 Hr EC50 Pseudokirchneriella subcapitata	0.174 - 0.311 mg/L [static]
48 Hr EC50 Daphnia magna	>100 mg/L
48 Hr EC50 Daphnia magna	1 mg/L [Static]

Conditions

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.

* * * 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.

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*** Section 14 - Transportation Information ***

DOT 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)

Nickel (7440-02-0)

SARA 313: 0.1 % de minimis concentration
CERCLA: 100 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); 45.4 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

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
Copper	7440-50-8	Yes	Yes	Yes	Yes	Yes	No
Nickel	7440-02-0	Yes	Yes	Yes	Yes	Yes	No
Tin	7440-31-5	Yes	Yes	Yes	Yes	Yes	No

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The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

Component Analysis - WHMIS IDL

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

Component	CAS #	Minimum Concentration
Copper	7440-50-8	1 %
Nickel	7440-02-0	0.1 %
Tin	7440-31-5	1 %

Additional Regulatory Information

Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Copper	7440-50-8	Yes	DSL	EINECS
Nickel	7440-02-0	Yes	DSL	EINECS
Tin	7440-31-5	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

Available on request.

End of Sheet