wieland

Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: CuVerro VI Antimicrobial Copper Alloy – EPA Reg. No. 85353-6

Chemical Name: Antimicrobial Copper

Synonyms: Antimicrobial Copper Alloys Group VI, UNS Designations: C27200, C27400, C28000, C28300, C28310, C28320, C46210, C49350, C49250, C49260, C49300, C49340, C66850, C66900, C68300, C68350, C71600, C74300, C74400, C75720, C76400, C85450, C85550, C85900, C85910, C85920, C86350, C89550, C89560, C89720, C99710

Chemical Family: Copper based alloy

Formula: Not applicable - mixture

Product Use: Antimicrobial agent

Manufacturer:

SDS Control Group
Wieland
305 Lewis and Clark Blvd
East Alton, IL 62024-1197
wieland-rolledproductsna.com

Technical Information:
(618)258-5654

Emergency Information:
(618)258-5167

2. HAZARD IDENTIFICATION

In solid form, this material is not hazardous. Dust and fumes are hazardous materials.

OSHA HCS 2012 Flammability – 0 Health – 1 Physical – 0

Label Elements OSHA HCS 2012

Hazard Statements
Causes skin irritation – H315
May cause respiratory irritation – H335

Precautionary statements
Avoid breathing dust or fumes – P261

Prevention
Avoid breathing dust or fumes – P261
Do not get in eyes, on skin, or on clothing – P262

Response
In case of inadequate ventilation wear respiratory protection – P285

EYE CONTACT:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.– P305 + P351 + P338 If eye irritation develops, Get medical advice/attention – P313
SKIN CONTACT:	Rinse skin with water/shower – P353 Take off contaminated clothing and wash before reuse – P362 If skin irritation or rash develops, get medical advice/attention – P363
INHALATION:	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing – P340 Get medical advice/attention – P313
INGESTION:	Not a likely route of exposure for finished metal alloy. If dust is ingested, immediately drink water to dilute. Get medical advice/attention – P363
NOTE TO PHYSICIANS:	There is no specific antidote to the active ingredients in this product; use symptomatic treatment.

Other Hazards

OSHA HSC 2012 Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Exposure to dust or fume may aggravate an existing dermatitis, asthma, emphysema, or other respiratory disease.

Canada According to WHMIS

Classification of the substance or mixture

WHMIS This product is considered to be a manufactured article and therefore not subject to WHMIS requirements.

Other Information

NFPA Not rated

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS Number	Components	% By Weight	EINECS/ ELINCS #	EU Classification	
				Symbol	R-Phrase
7440-50-8	Copper	75.0 – 90.0	231-159-6	None	None
7440-02-0	Nickel	0.0 – 23.0	231-111-4	Xn	R 40/43
7440-31-5	Tin	0.0 - 13.0	231-141-8	None	None
7439-96-5	Manganese	0.0 – 5.5	231-105-1	None	None
7440-36-0	Antimony	0.0 – 1.2	231-146-5	None	None
7439-89-6	Iron	0.0 – 5.5	231-096-4	None	None
7440-66-6	Zinc	0.0 – 21.3	231-175-3	F (as dust or powder)	R 15-17
7429-90-5	Aluminum	0.0 – 15.0	231-072-3	None	None
7440-21-3	Silicon	0.0 -1.3	231-130-8	None	None
7782-49-2	Selenium	0.0 – 0.8	231-957-4	T	R23/25, 33,
7723-14-0	Phosphorous	0.0 – 0.2	231-768-7	F, N	R11, 16, 50
7440-69-9	Bismuth	0.0 – 2.2	231-177-4	None	None
7440-42-8	Boron	0.0 – 0.2	231-151-2	None	None
7440-44-0	Carbon	0.0 – 0.5	231-153-3	None	None
7439-95-4	Magnesium	0.0 – 0.1	231-104-6	F	R15, 17
7440-32-6	Titanium	0.0 – 0.5	231-142-3	None	None
7440-67-7	Zirconium	0.0 – 0.2	231-176-9	F	R15, 17

OSHA REGULATORY STATUS: In solid form, not hazardous. Dust or fume: carcinogen, irritant, lung and respiratory system toxicant, neurotoxicant, sensitizer.

In solid form, this material is not hazardous. Dust and fumes are hazardous materials.

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush out fume and dust particles with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If eye irritation develops, call a physician at once.

SKIN CONTACT: If exposed to dust or fumes, wash skin with plenty of water. Remove contaminated clothing and shoes and launder before reuse. If skin irritation or rash develops and persists or recurs, get medical attention.

INHALATION: If symptoms of lung irritation occur (coughing, wheezing or breathing difficulty), remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep affected person warm and at rest. Get medical attention.

INGESTION: Not a likely route of exposure for finished metal alloy. If dust is ingested, immediately drink water to dilute. Consult a physician if symptoms develop.

NOTE TO PHYSICIANS: There is no specific antidote to the active ingredients in this product; use symptomatic treatment.

5. FIRE FIGHTING MEASURES

PROPERTY	VALUE	PROPERTY	VALUE
Explosive	No	Flammable	No
Combustible	No	Pyrophoric	No
Flash Point (°C):	Not Applicable	Burning Rate of Material	Not Applicable
Lower Explosive Limit:	Not Applicable	Auto Ignition Temp:	Not Applicable
Upper Explosive Limit:	Not Applicable	Flammability Classification: (Defined by 29 CFR 1910.1200)	Not Applicable

UNSUAL FIRE AND EXPLOSION HAZARDS: Dust may cause an ignitable and/or an explosive atmosphere.

EXTINGUISHING MEDIA: For localized powder fires, smother with dry sand, dry dolomite, sodium chloride or soda ash. Use fire-extinguishing media appropriate to fight surrounding fire.

SPECIAL FIREFIGHTING PROCEDURES: None required.

6. ACCIDENTAL RELEASE MEASURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL (618)258-5167.

In dust form, this product may be an explosion hazard. Remove all sources of ignition. Dust of fume may be suppressed by the use of a local exhaust system. Dispose of per guidelines under Section 13, WASTE DISPOSAL.

7. HANDLING AND STORAGE

HANDLING:	Avoid dispersion of dust in air.
STORAGE:	No Special Requirements
Shelf Life Limitations:	None known
Incompatible Materials for Packaging:	None known
Incompatible Materials for Storage or Transport:	None known
OTHER PRECAUTIONS:	Do not shake clothing, rags or other items to remove dust. Dust should be removed by washing or HEPA vacuuming.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	CHEMICAL	ACGIH TLV	OSHA PEL	INTERNATIONAL OELS
7440-50-8	Copper	0.2 mg/ m^3 (fume); 1 mg/m3 (dusts and mists)	0.1 mg/m3 (fume); 1 mg/m3 (dusts and mists)	Austria, Belgium, Canada: 0.2 mg/ m^3 (fumes), 1 mg/ m^3 (dusts) Denmark: 1.0 mg/m3 (dust and powder) Germany(MAK): 0.1 mg/ m^3 (fume), 1 mg/ m^3 (dusts and mists)
7440-02-0	Nickel	0.2 mg/ m^3 (inhalable); A1	1 mg/m3	Germany(MAK): 1 mg/ m^3 (Sah) Canada (B.C.), Czechoslovakia, Denmark, Norway: 0.05 mg/ m^3, K1, sensitizer Poland: 0.25 mg/ m^3 Ireland, Sweden, Switzerland, U.K.: 0.5 mg/ m^3 Belgium, Canada (Alberta & others), Finland, Japan, Mexico, Netherlands: 1 mg/m3 Portugal: 1.5 mg/ m^3
7440-31-5	Tin	2mg/ m^3	2mg/ m^3	U.K. (LTEL): 5 mg/ m^3 Austria & Germany(MAK), Belgium, Finland, Denmark, The Netherlands, Poland, Switzerland: 2 mg/ m^3 Hungary, Norway: 1 mg/ m^3
7439-96-5	Manganese	0.2 mg/ m^3	5 mg/m3 (Ceiling	Belgium, Denmark, Finland, France, Switzerland, U.K.: 1 mg/ m^3 Sweden: 2.5 mg/ m^3 Germany(MAK): 0.5 mg/ m^3
7782-49-2	Selenium	0.2 mg/ m^3	5mg/ m^3 (ceiling)	U.K., Belgium, Australia, Turkey: TWA 0.2 mg/m3, Denmark, Finland, Germany, Poland, Sweden: TWA 0.1 mg/m3, Hungary: STEL 0.1 mg/m3
7439-89-6	Iron	None established	None established	None established
7440-66-6	Zinc	None established	None established	None established
7429-90-5	Aluminum	10 mg/m^3	15 mg/ m^3 (total dust)	Belgium, France, Hungary , Sweden: 5 mg/ m^3 (resp. dust) Germany(MAK): 1.5 mg/ m^3 (resp. dust) Switzerland: 6 mg/ m^3
7440-21-3	Silicon	10 mg/m^3	15 mg/ m^3 (total dust)	Belgium, Denmark, France, Netherlands, U.K.: 10 mg/m^3 Switzerland: 4 mg/m^3

ENGINEERING CONTROLS: Local exhaust ventilation is recommended if significant dusting occurs or fumes are generated. Otherwise, use general exhaust ventilation.

EYE / FACE PROTECTION: Use safety glasses.

SKIN PROTECTION: Wear impervious (cut-resistant) gloves and other protective clothing (aprons, coveralls) as appropriate to prevent skin contact when using this product. if generating a dust, wash thoroughly after handling, especially before eating, drinking, or smoking.

RESPIRATORY PROTECTION: Respiratory protection not normally needed. If dusting occurs or fumes are generated above the PEL/TLV, use a NIOSH-approved half-face or full-face respirator equipped with High Efficiency Particulate (HEPA) filter cartridges.

GENERAL HYGIENE CONSIDERATIONS: Do not eat, drink, or smoke while using this product in dust form.

9. PHYSICAL AND CHEMICAL PROPERTIES

PROPERTY	VALUE	PROPERTY	VALUE
Appearance:	Dependent on final form	*Vapor Density (air = 1):*	Not applicable
Odor:	None	*Boiling Point (° F):*	No data
Molecular Weight:	Not applicable - Mixture	*Melting point::*	1976 - 1981ºF
Physical State:	Solid	*Specific gravity (g/cc):*	8.94
pH:	Not applicable	*Bulk Density:*	7.2 to 9.4 g/cc
Vapor Pressure (mm Hg):	Not applicable	*Viscosity (cps):*	Not applicable
Vapor Density:	Not applicable	*Decomposition:*	Not applicable
Solubility in Water (20° C):	Negligible	*Evaporation Rate:*	Not Applicable
Volatiles, Percent by volume:	Not applicable	*Octanol/water partition coefficient::*	Unknown

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal temperatures and pressure

CONDITIONS TO AVOID: Avoid contact with carbon monoxide, particularly at temperatures between 50°C and 300°C, to prevent formation of nickel carbonyl which is toxic and a carcinogen.

MATERIALS TO AVOID: Acetylene, chlorine

HAZARDOUS DECOMPOSITION PRODUCTS: When heated to decomposition, may produce metal oxides and fumes. Inhalation of high concentrations of metal fumes may cause a condition known as “metal fume fever” which is characterized by flu-like symptoms.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

POTENTIAL EXPOSURE ROUTES: For dust: ingestion, inhalation, and eye contact. For fume: inhalation and eye contact. The finished alloy metal is not hazardous.

ACUTE ANIMAL TOXICITY DATA:

FOR PRODUCT		FOR COMPONENTS							
		Copper	Nickel	Manganese	Selenium	Iron	Zinc	Aluminum	Silicon
Oral LD_{50}	Believed to be > 5 g/kg	3.5 mg/kg (mouse, Ip)	> 5 g/kg (rat)	9 g/kg (rat)	6.7 g/kg (rat)	30 g/kg (rat)	Zinc	No data	3.16 g/kg (rat)
Dermal LD_{50}	Believed to be > 2 g/kg	375 mg/kg (rabbit, subcut)	> 7.5 g/kg (rabbit, subcut)	No data	No data	No data	No data	No data	No data
Inhalation LC_{50}	Believed to be slightly to moderately toxic	No data	> 12 mg/kg (rat, It)	No data	No data	No data	No data	> 1000 mg/ m^3 (rat)	No data
Irritation	Eye and Resp. Irritation	Respiratory Irritation	Respiratory Irritation	Mild eye & skin irritation	Respiratory Irritation	Eye irritation	Eye Irritation	Mild eye & skin irritation	Eye, skin, & respiratory irritation
Sensitization	No Data	No data	Skin sensitization	No data	Skin & Respiratory sensitization	No data	No data	No data	No data

SUBCHRONIC/ CHRONIC TOXICITY*:* No information for product. Subchronic and chronic exposure to beryllium via inhalation has caused lung damage in laboratory animals.

CARCINOGENICITY*:* In laboratory animal studies, chronic exposure to high concentrations of nickel has caused an increase in lung and nasal tumors. The International Agency for Research on Cancer (IARC) has classified nickel as possibly carcinogenic to humans, Group 3.

MUTAGENICITY: This product is not known or reported to be mutagenic. Nickel has been shown to be mutagenic in *in vitro* studies.

REPRODUCTIVE, TERATOGENICITY, OR DEVELOPMENTAL EFFECTS*:* This product is not known or reported to cause reproductive or developmental effects. Exposure of male rats to high concentrations of nickel caused testicular degeneration. However, symptoms of systemic toxicity, including severe weight loss, were also observed at the same concentrations indicating that the testicular effects may have been secondary to frank toxicity.

NEUROLOGICAL EFFECTS: This product is not known or reported to cause neurological effects. Chronic exposure to very high concentrations of manganese dust has caused nervous system effects including muscle weakness, tremors, and behavioral changes in humans.

INTERACTIONS WITH OTHER CHEMICALS: None known or reported.

12. ECOLOGICAL INFORMATION

ECOTOXICITY: No data is available on this product. Individual constituents are as follows:

Copper: The toxicity of copper to aquatic organisms varies significantly not only with the species, but also with the physical and chemical characteristics of the water, such as its temperature, hardness, turbidity and carbon dioxide content. Copper concentrations varying from 0.1 to 1.0 mg/l have been found by various investigators to be not toxic for most fish. However, concentrations of 0.015 to 3.0 mg/l have been reported as toxic, particularly in soft water to many kinds of fish, crustaceans, mollusks, insects, and plankton.

Nickel: 96 hr LC50 , rainbow trout =31.7 mg/L; 96 hr LC50 , fathead minnow = 3.1 mg/L; 72 hr EC50 , freshwater algae (4 species): = 0.1 mg/L; 96 hr LC50 , Daphnia = 0. 51 mg/L

MOBILITY: No Data

PERSISTANCE/DEGRADABILITY: Not biodegradable

BIOACCUMULATION: No Data

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D. Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and non- hazardous wastes. This product may be a candidate for metal reclamation.

14. TRANSPORTATION INFORMATION

	U.S. DOT	RID/ADR	IMDG	IATA	IMO	Canada TDG
PROPER SHIPPING NAME:	Not regulated					
HAZARD CLASS:						
UN NO.:						
PACKING GROUP:						
LABEL:						
REPORTABLE QUANTITY:						

15. REGULATORY INFORMATION

This product is regulated by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

EPA Reg. Number: 85353-6

US FEDERAL

TSCA	The components of this product are listed on the Toxic Substance Control Act inventory.				
CERCLA:	Copper, R.Q. = 5000 lbs.; Nickel, R.Q. = 100 lbs.; Zinc, R.Q. = 1000 lbs.; Silver, R.Q. = 1000 lbs.; Phosphorus, R.Q. = 1 lb. (No reporting is required if diameter of the pieces of metal is equal to or exceeds 100 micrometers (0.004 inches).				
SARA 313:	Copper, Nickel, Manganese, Zinc (dust or fume), Aluminum (fume or dust), Selenium				
SARA 313 Hazard Class:	*Health*: For dust or fume only	Acute – Yes, Chronic - Yes	*Fire:* None	*Reactivity:* None	*Release of Pressure*: None
SARA 302 EHS List:	None of the components of this product are listed.				

*RQ = Reportable Quantity

STATE RIGHT-TO-KNOW STATUS

Component	*CA Prop. 65	New Jersey	Pennsylvania	Massachusetts	Michigan
Copper	Not listed	X	X	X	X
Nickel	X	X	X	X	X
Tin	Not listed	X	X	X	Not listed
Manganese	Not listed	X	X	X	Not listed
Selenium	Not listed	X	X	X	X
Iron	Not	Not listed	Not listed	Not listed	Not listed
Zinc	Not listed	X	Not listed	X	X
Aluminum	Not listed	X	X	X	Not listed
Silicon	Not listed	Not listed	X	X	Not listed

* "WARNING: This product contains detectable amounts of a chemical(s) known to the State of California to cause cancer and/or birth defects or other reproductive harm."

EUROPEAN REGULATIONS

German WGK Classification: Unknown

CANADIAN REGULATIONS

DSL LIST: The components of this product are on the DSL or are exempt from reporting under the New Substances Notification Regulations.

IDL: Copper, Nickel, Tin, Manganese, Selenium

WHMIS: This product is considered to be a manufactured article and therefore not subject to WHMIS requirements.

16. OTHER INFORMATION

Wieland SDS No.: CuVerro VI Antimicrobial Copper Alloy

Revision Date: 6/1/15 **Review Date: 2/19/20**

REVISIONS: Update to composition 1/1/04, revised format 1/6/16

PREPARED BY: Wieland

NOTICE: THE INFORMATION IN THIS SDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. WIELAND BELIEVES THIS INFORMATION TO BE RELIABLE AND CURRENT AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS.

This document reviewed annually