PEPETOOLS 4951 Everdur Silicon Bronze Alloy

THIS SOLID METALLIC BRONZE ALLOY IS GENERALLY CLASSIFIED AS AN “ARTICLE” AND DOES NOT CONSTITUTE A HAZARDOUS MATERIAL IN SOLID FORM UNDER THE DEFINITIONS OF THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200). ANY ARTICLES MANUFACTURED FROM THIS SOLID PRODUCT WOULD BE GENERALLY CLASSIFIED AS NON-HAZARDOUS. HOWEVER, SOME HAZARDOUS CONDITIONS REMAIN WITH THIS PRODUCT. DUST, FUMES AND GASES CAN BE EMITTED UNDER CERTAIN PROCESSING CONDITIONS, SUCH AS, BUT NOT LIMITED TO: CASTING, BURNING, MELTING, CUTTING, SAWING, BRAZING, GRINDING, MACHINING, MILLING, SOLDERING AND WELDING .

THIS ALLOY IN THE SOLID, ORIGINAL FORM, PRESENTS NO FIRE OR EXPLOSION HAZARD. THE CREATION OF SMALL FINES, AND DUST DURING PROCESSING MAY IGNITE UNDER SPECIFIC CONDITIONS.

THE FOLLOWING CLASSIFICATION INFORMATION IN THIS SDS (SAFETY DATA SHEET) IS FOR THE HAZARDOUS ELEMENTS WHICH MAY BE RELEASED DURING PROCESSING.

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Safety Data Sheet

Pepetools provides this Safety Data Sheet in a generic format for individual alloys that fall within a specific group.

This information complies with SDS's for the United States as well as some internationally accepted GHS formats.

Some regulatory information contained within this document may not be applicable to a customer's specific usage or for their individual state or country requirements. When determining the applicable Data, please refer to the supplied Assay that match the Alloy Numbers. This Assay will list the percentage or range of each Base Metal found in the alloy by weight.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : Pepetools 4951 Everdur Silicon Bronze

Other means of identification : Copper CDA 873 alloy that may also contain any of the following: Manganese (Mn), Tin (Sn), Iron (Fe), Silicon (Si), Lead (Pb), Zinc (Zn)

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : For casting or consumables and related

1.3. Details of the supplier of the safety data sheet

Pepetools
7601 S.W. 34th Street
Oklahoma City, OK 73179 USA
support@pepetools.com

1.4. Emergency telephone number

Emergency number +1 405-745-4054

Call a POISON CENTER or Doctor/Physician for Medical Emergency

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Carc. 1B
May Cause Cancer (Lead) H350

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS08

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H350 - May cause cancer (Lead)

Precautionary statements (GHS-US) : P264 - Wash thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P308+P313 - IF exposed or concerned: Get medical advice/attention
P314 - Get medical advice and attention if you feel unwell
P391 - Collect spillage
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

Full text of H-phrases: see section 16

Items highlighted in yellow **may** be present in the 4951 and above the safe PEL level and must be included in the Safety Data Sheet.

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Copper (Cu)	(CAS No) 7440-50-8	> 94	Not classified
Manganese (Mn)	(CAS No) 7439-96-5	< 2	Not classified
Tin (Sn)	(CAS No) 7440-31-5	< 0.20	Not classified
Iron (Fe)	(CAS No) 7439-89-6	< 0.20	Acute Tox. 4 (Oral), H302
Nickel (Ni)	(CAS No) 7440-02-0	<0.20	Skin Sens. 1, H317 Carc. 1B, H350 STOT RE 1, H372
Silicon (Si)	(CAS No) 7440-21-3	< 5	Not classified
Lead (Pb)	(CAS No) 7439-92-1	< 0.20	Carc. 1B, H350
Zinc (Zn)	(CAS No) *7440-66-6*	< 0.25	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

First-aid measures after skin contact : Flush with water for at least 15 minutes. Seek medical attention if irritation develops or persists.

First-aid measures after eye contact : Immediately flush eyes with water and continue washing for at least 15 minutes. Obtain medical attention if discomfort persists.

First-aid measures after ingestion : Do NOT induce vomiting. Get immediate medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : Short-term (acute) overexposure to the gases, fumes, and dusts may include irritation of the eyes, lungs, nose, and throat. Some toxic gases associated with welding may cause pulmonary edema, asphyxiation, and death.

Acute overexposure may include signs and symptoms such as watery eyes, nose and throat irritation, headache, dizziness, difficulty in breathing, frequent coughing, or chest pain. The presence of chromium/chromate in fume can cause irritation of nasal membranes and skin. The presence of nickel compounds in fume can cause metallic taste, nausea, tightness of chest, fever, and allergic reaction. Excessive inhalation or ingestion of manganese can produce manganese poisoning. Overexposure to manganese compounds may affect the central nervous system, symptoms of which are languor, sleepiness, muscular weakness, emotional disturbances, and spastic gait resembling Parkinsonism. These symptoms can become progressive and permanent if not treated. Excessive inhalation of fumes may cause “Metal Fume Fever” with Flu-like symptoms such as chills, fever, body aches, vomiting, sweating, etc.

Symptoms/injuries after skin contact : Dusts may cause irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

Symptoms/injuries after ingestion : Not an anticipated route of exposure during normal product handling. May be harmful if ingested.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media : None.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Not flammable.

Explosion hazard : None known.

5.3. Advice for firefighters

Protection during firefighting : Firefighters should wear full protective gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : No special measures required.

Methods for cleaning up : Attempt to reclaim the product, if this is possible.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid generating dust and inhaling fumes.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : No special storage necessary.

7.3. Specific end use(s)

For Casting and welding consumables and related products

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Nickel (7440-02-0)		
USA ACGIH	ACGIH TWA (mg/m³)	1.5 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³

Tin (7440-31-5)		
USA ACGIH	ACGIH TWA (mg/m³)	2 mg/m³

Lead (7439-92-1)		
USA ACGIH	ACGIH TWA (mg/m³)	0.05 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	50 µg/m³

Copper (7440-50-8)		
USA ACGIH	ACGIH TWA (mg/m³)	0.2 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³

Manganese (7439-96-5)		
USA ACGIH	ACGIH TWA (mg/m³)	0.1 mg/m³
USA OSHA	OSHA PEL (Ceiling) (mg/m³)	5 mg/m³

Silicon (7440-21-3)		
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³
Zinc (7440-66-6)		
USA OSHA	OSHA PEL (TWA) (mg/m³)	See Oxide Fume
Zinc Oxide Fume (1314-13-2)	OSHA PEL (TWA) (mg/m³) (Inhalation, if material has been heated above the boiling point, driving off zinc fume.)	5 mg/m3 Respirable fraction. 5 mg/m3 Fume. 15 mg/m3 Total dust.

Appropriate engineering controls : Local exhaust and general ventilation must be adequate to meet exposure standards.

Hand protection : Wear insulated gloves when Casting.

Eye protection : When Casting wear a face shield.

Skin and body protection : Wear head and body protection, which helps to prevent injury from radiation, sparks, flame. As a minimum, wear protective gloves and a protective face shield. Protective clothing may include arm protectors, aprons, hats, shoulder protection. Train the employee not to touch recently cast product. Casters should not wear short sleeve shirts or short pants.

Respiratory protection : If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid form (cube)

Appearance : Pig, Ingot, Bar, Rod, Cube, Wire, Grain, Others

Color : Silver, Yellow Metallic

Odor : Metallic

Odor threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : 1122 F (550 C) to 2597 F (1425 C), depending on % of Cu.

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Self-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	0.28 lb./ cu. in. to 0.32 lb./cu. in., depending on % of Cu
Solubility	:	No data available
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

None.

10.5. Incompatible materials

None.

10.6. Hazardous decomposition products

Casting fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the mold being used, the process, procedure and other consumables used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: release agents, the number of casters, the volume of the work area, the quality and the amount of ventilation, the position of the workers head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from the cleaning and degreasing activities).

When a bronze alloy is melted, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. Fume and gas decomposition, and not the ingredients in the alloys, are important. The concentration of a given fume or gas component may decrease or increase by many times the original concentration. Also, new compounds not in the electrodes may form.

Decomposition products of normal operation include those originating from the volatilization, reaction or oxidation of the materials shown in Section 3, plus those from the balance of the casting material, as noted above. Reasonable expected fume constituents of this product would include: Complex oxides of silicon, copper and manganese.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the workers mask if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Iron (7439-89-6)	
LD50 oral rat	984 mg/kg
ATE (oral)	984.000 mg/kg

Nickel (7440-02-0)	
LD50 oral rat	> 9000 mg/kg

Tin (7440-31-5)	
LD50 oral rat	700 mg/kg

Manganese (7439-96-5)	
ATE (oral)	9000000.000 mg/kg

Nickel (7440-02-0)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen

Lead (7439-92-1)	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : May cause cancer.

Specific target organ toxicity (repeated exposure) : Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Nickel (7440-02-0)	
LC50 fish 1	> 100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio)
EC50 Daphnia 1	> 100 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 other aquatic organisms 1	0.18 mg/l (Exposure time: 72 h - Species: Pseudokirchneriellasubcapitata)
LC50 fish 2	1.3 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static])
EC50 Daphnia 2	1 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 other aquatic organisms 2	0.174 - 0.311 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata [static])

Lead (7439-92-1)	
LC50 fish 1	0.44 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static])
EC50 Daphnia 1	600 µg/l (Exposure time: 48 h - Species: waterflea)
LC50 fish 2	1.17 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])

Copper (7440-50-8)	
LC50 fish 1	0.0068 - 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 other aquatic organisms 1	0.0426 - 0.0535 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata [static])
LC50 fish 2	< 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 other aquatic organisms 2	0.031 - 0.054 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata [static])

Zinc 7440-66-6	
Aquatic Acute Category 1 (H400)	231-175-3 N R50/53
Aquatic Chronic Category 1 (H410)	

12.2. Persistence and degradability

No additional information available

12.3. Bio-accumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

In accordance with DOT / ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

Not a dangerous good in sense of transport regulations

14.2. UN proper shipping name

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Iron (7439-89-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Nickel (7440-02-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	0.1 %

Tin (7440-31-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Lead (7439-92-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	0.1 %

Copper (7440-50-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 %

Manganese (7439-96-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 %

Silicon (7440-21-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. US State regulations

Nickel (7440-02-0)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes				

Lead (7439-92-1)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	Yes	Yes	Yes	

Nickel (7440-02-0)
U.S. - Massachusetts - Right To Know List U.S. - Minnesota - Hazardous Substance List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

Lead (7439-92-1)
U.S. - Massachusetts - Right To Know List U.S. - Minnesota - Hazardous Substance List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

Copper (7440-50-8)
U.S. - Massachusetts - Right To Know List U.S. - Minnesota - Hazardous Substance List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

Manganese (7439-96-5)

U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Silicon (7440-21-3)

U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

SUPPLIER DISCLAIMER:

Pepetools believes that the information contained in this Safety Data Sheet (SDS) is accurate as of the "Date of Last Revision" specified on this SDS. As the condition or methods of use are beyond Pepetools' control, we do not assume any responsibility and expressly disclaim any liability for any use of this material. The information relates only to typical properties of the product. Do not use the information for product performance or specification purposes. The information is for use by technically skilled persons at their own risk whom must determine the conditions of safe use of the products.

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Source SDS: Created January 5, 2015 | Reviewed May 5, 2015 | Rev 001

Pepetools branding/contact update: November 2, 2026. Technical content and revision retained.

Full text of H-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Carc. 1B	Carcinogenicity, Category 1B
Skin Sens. 1	Sensitization — Skin, category 1
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
H302	Harmful if swallowed
H317	May cause an allergic skin reaction
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

HMIS III Rating

Health	:	2 Moderate Hazard - Temporary or minor injury may occur
Flammability	:	0 Minimal Hazard
Physical	:	0 Minimal Hazard



· ***HMIS-ratings (scale 0 - 4)***

· ***Classification system:***
· ***NFPA ratings (scale 0 - 4)***



· ***Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*