

Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Date of issue: 05/16/2017 Version: 5.0

<pre>reduct form : Mixure : Mixure : SULVADV® 351 rade name : Alloys for brain/soldering and other metallurgical processes :</pre>	SECTION 1: Identification			
inde aneae : SILVALOY® 351 inductode : A0000004 inductode : A0000004 inductode : A0000004 inductode : A0000004 inductode : A0000004 inductode : A0000004 inductode : A0000004 <b>Supplier</b> <b>Supplier</b> <b>Consomended use and restrictions on use</b> <b>Consomended use in classification</b> <b>CHEMTREC within the USA and Canada: 1-800-424-9300</b> CHEMTREC outside the USA and Canada: 1-800-424-9300 CHEMTREC Outside the USA and Canada: 1-800-424-930 CHEMTREC OUTSide USA CHEMTREC OUTSid	1.1. Identification			
traduct code         i. 0.00000044           2. Recommended uses and restrictions on use (seconmended uses and restrictions on use)	Product form	: Mixture		
2. Recommended use and restrictions on use         tecommended use       : Alloys for brazing/soldering and other metallurgical processes	rade name	: SILVALOY® 351		
tecommended use : Alloys for brazing/soldering and other metallurgical processes :	Product code	: A00000044		
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ucas Mihaupt, Inc. Ses South Ponnysivania Ave. 2014) 798-000 M. SDSinlo@ lucasmilhaupt.com - www.Lucasmilhaupt.com A. Energency teleptone number ::::::::::::::::::::::::::::::::::::	Recommended use		gical processes	
ucas Mihaupt, Inc. Ses South Ponnysivania Ave. 2014) 798-000 M. SDSinlo@ lucasmilhaupt.com - www.Lucasmilhaupt.com A. Energency teleptone number ::::::::::::::::::::::::::::::::::::	I.3. Supplier		· ·	
immergency number       CHEMTREC within the USA and Canada: 1-800-424.9300 CHEMTREC outside the USA and Canada: 1-701-741-5970         SECTION 2: Hazard(s) identification       Immergency number         (classification of the substance or mixture       Immergency number         HS-US classification       May cause drowsiness or dizziness.         yatioty — Single exposure, lategory 3, Narcosis       May cause drowsiness or dizziness.         vicity — Single exposure, lategory 3, Narcosis       Immergency number         vicity — Single exposure, lategory 3, Narcosis       Immergency number         vicity — Single exposure, lategory 3, Narcosis       Immergency number         vicity — Single exposure, lategory 3, Narcosis       Immergency number         vicity — Single exposure, lategory 3, Narcosis       Immergency number         vicity — Single exposure, lategory 3, Narcosis       Immergency number         vicity — Single exposure, lategory 3, Narcosis       Immergency number         vicity — Single exposure, lategory 3, Narcosis       Immergency number         vicity — Single exposure, lategory 3, Narcosis       Immergency number         vicity — Single exposure, lategory 3, Narcosis       Immergency number exposure, lategory 3, Narcosis         vicity — Single exposure, lategory 3, Narcosis       Immergency numbergency 1, Narcosis         vicity = Single exposure, lategory 3, Narcosis       Immergency 1, Narcosis	_ucas-Milhaupt, Inc. 5656 South Pennsylvania Ave. Cudahy, WI 53110 - USA Γ (414)-769-6000	smilhaupt.com		
CHEMTREC outside the USA and Canada +1 701-741-6970         SECTION 2: Hazard(s) identification         ALL Classification of the substance or mixture         HSUS classification         Bigle exposure, saregory 3, Marcosis         Way cause drowsiness or dizziness.         Switchy — Single exposure, saregory 3, Marcosis         Way cause drowsiness or dizziness.         Substance or mixture         Substance or mixture         Substance or mixture         May cause drowsiness or dizziness.         Substance or mixture         Warning         Istaard statements (GHS-US)         I H336 - May cause drowsiness or dizziness.         Part - Noid breathing dust/tume/gas/mist/vapours/spray.         P21 - Void breathing dust/tume/gas/mist/vapours/sp	1.4. Emergency telephone number			
A. Classification of the substance or mixture         SHS-US classification         pecific target organ       H336         with y Single seposure,         vial text of H statements: see section 16         2. GHS Label elements, including precautionary statements         HS-US labeling         tearant pictograms (GHS-US)         ignal word (GHS-US)         is H336 - May cause drowsiness or dizziness.         recautionary statements (GHS-US)         is H336 - May cause drowsiness or dizziness.         recautionary statements (GHS-US)         is H336 - May cause drowsiness or dizziness.         recautionary statements (GHS-US)         is H336 - May cause drowsiness or dizziness.         recautionary statements (GHS-US)         is H336 - May cause drowsiness or dizziness.         is positional information and keep comfortable for breathing P312 - Call a poison center/doctor if you feel unwell         P304 - P304 - I finaled is:	Emergency number			
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Act applicable   SECTION 3: Composition/information on ingredients   A. Substances   Iot applicable   2. Mixtures   Name   Silver   (CAS-No.) 7440-22-4   34 - 36   Zinc   (CAS-No.) 7440-66-6   31 - 35				
SECTION 3: Composition/information on ingredients         Substances         Idi applicable         2. Mixtures         Name       Product identifier       %         Silver       (CAS-No.) 7440-22-4       34 - 36         Zinc       (CAS-No.) 7440-66-6       31 - 35				
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Name	Product identifier	%
Copper	(CAS-No.) 7440-50-8	31 - 33
Full text of hazard classes and H-statements : see section 16		

SECTION 4: First-aid measures	
4.1. Description of first aid measures	
First-aid measures general	: Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell. Rinse mouth.
4.2. Most important symptoms and effe	ects (acute and delayed)
Symptoms/effects	: May cause drowsiness or dizziness.
Symptoms/effects after inhalation	: May cause respiratory irritation.
4.3. Immediate medical attention and s	pecial treatment, if necessary
Treat symptomatically.	
SECTION 5: Fire-fighting measures	
5.1. Suitable (and unsuitable) extinguis	
Suitable extinguishing media	: Dry powder. Water spray. Foam.
Unsuitable extinguishing media	: Water.
5.2. Specific hazards arising from the c	homical
Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.
5.3. Special protective equipment and p	
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
<b>SECTION 6: Accidental release mea</b>	asures
6.1. Personal precautions, protective e	quipment and emergency procedures
6.1.1. For non-emergency personnel	
6.1.1. For non-emergency personnel Emergency procedures	: Ventilate spillage area. Avoid breathing dust/fume/gas/mist/vapours/spray.
Emergency procedures	: Ventilate spillage area. Avoid breathing dust/fume/gas/mist/vapours/spray.
Emergency procedures 6.1.2. For emergency responders	
Emergency procedures	<ul> <li>Ventilate spillage area. Avoid breathing dust/fume/gas/mist/vapours/spray.</li> <li>Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".</li> </ul>
Emergency procedures 6.1.2. For emergency responders	: Do not attempt to take action without suitable protective equipment. For further information
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Emergency procedures 6.1.2. For emergency responders Protective equipment 6.2. Environmental precautions Avoid release to the environment. 6.3. Methods and material for containment	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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Emergency procedures 6.1.2. For emergency responders Protective equipment 6.2. Environmental precautions Avoid release to the environment. 6.3. Methods and material for containment For containment Methods for cleaning up Other information 6.4. Reference to other sections For further information refer to section 13. SECTION 7: Handling and storage 7.1. Precautions for safe handling	<ul> <li>Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".</li> <li>nent and cleaning up <ul> <li>Collect spillage.</li> <li>Mechanically recover the product.</li> <li>Dispose of materials or solid residues at an authorized site.</li> </ul> </li> <li>Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray.</li> <li>Do not eat, drink or smoke when using this product. Always wash hands after handling the</li> </ul>
Emergency procedures 6.1.2. For emergency responders Protective equipment 6.2. Environmental precautions Avoid release to the environment. 6.3. Methods and material for containment For containment Methods for cleaning up Other information 6.4. Reference to other sections For further information refer to section 13. SECTION 7: Handling and storage 7.1. Precautions for safe handling Precautions for safe handling Hygiene measures	<ul> <li>Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".</li> <li>collect spillage.</li> <li>Collect spillage.</li> <li>Mechanically recover the product.</li> <li>Dispose of materials or solid residues at an authorized site.</li> </ul> • Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray. • Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
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### **SECTION 8: Exposure controls/personal protection**

### 8.1. Control parameters

Silver (7440-22-4)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup> (dust and fume)
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	0.01 mg/m <sup>3</sup>
IDLH	US IDLH (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (dust)
NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	0.01 mg/m <sup>3</sup> (dust)
Copper (7440-50-8)		
ACGIH	ACGIH TWA (mg/m³)	0.2 mg/m³ (fume)
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)
IDLH	US IDLH (mg/m <sup>3</sup> )	100 mg/m <sup>3</sup> (dust, fume and mist)
NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (dust and mist) 0.1 mg/m <sup>3</sup> (fume)
Zinc (7440-66-6)		
ACGIH	ACGIH TWA (mg/m³)	2 mg/m³ (as ZnO)

### 8.2. Appropriate engineering controls

- : Ensure good ventilation of the work station.
- Appropriate engineering controls Environmental exposure controls
- : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

### Hand protection:

Protective gloves

### Eye protection:

Safety glasses

### Skin and body protection:

Wear suitable protective clothing

### **Respiratory protection:**

In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical p	properties
9.1. Information on basic physical and c	hemical properties
Physical state	: Solid
Appearance	: White to light yellow metallic luster, various forms.
Colour	: No data available
Odour	: No data available
Odour threshold	: No data available
рН	: No data available
Melting point	: 1390 °F
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available

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Relative density	: Not applicable
Solubility	: No data available
Log Pow	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosive limits	: Not applicable
Explosive properties	: No data available
Oxidising properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

Oxidizing agent. Strong acids. Strong bases.

### **10.6.** Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

: Not classified

Silver (7440-22-4)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 2000 mg/kg
Zinc (7440-66-6)	
LD50 oral rat	630 mg/kg
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/effects	: May cause drowsiness or dizziness.
Symptoms/effects after inhalation	: May cause respiratory irritation.

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SECTION 12: Ecological infor	nation
12.1. Toxicity	
Ecology - general	: Very toxic to aquatic life.
Silver (7440-22-4)	
LC50 fish 1	0.00155 - 0.00293 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 1	0.00024 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	0.0062 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])
LC50 fish 2	< 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
Zinc (7440-66-6)	
LC50 fish 1	2.16 - 3.05 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	0.139 - 0.908 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	0.211 - 0.269 mg/l (Exposure time: 96 h - Species: Pimephales promelas [semi-static])

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative 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	5
13.1. Disposal methods	
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
SECTION 14: Transport information	
Department of Transportation (DOT)	
In accordance with DOT	
Not applicable	
Transportation of Dangerous Goods	
Not applicable	
Transport by sea	
Not applicable	
Air transport	

Not applicable

## **SECTION 15: Regulatory information**

15.1. US Federal regulations

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Silver (7440-22-4)	
Listed on the United States TSCA (Toxic Substan Subject to reporting requirements of United State	
CERCLA RQ	1000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 $\mu m$
Copper (7440-50-8)	
Listed on the United States TSCA (Toxic Substan Subject to reporting requirements of United State	
CERCLA RQ	5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 $\mu m$
Zinc (7440-66-6)	
Listed on the United States TSCA (Toxic Substan Subject to reporting requirements of United State	
CERCLA RQ	454 kg no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 $\mu m$

### **15.2. International regulations**

Silver (7440-22-4)	
Listed on the TCSI (Taiwan Chemical Substance Inventory)	
Copper (7440-50-8)	
Listed on the TCSI (Taiwan Chemical Substance Inventory)	
Zinc (7440-66-6)	
Listed on the TCSI (Taiwan Chemical Substance Inventory)	

### 15.3. US State regulations

### Silver (7440-22-4)

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

### Copper (7440-50-8)

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

### Zinc (7440-66-6)

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

### **SECTION 16: Other information**

H336	May cause drowsiness or dizziness.	
NFPA health hazard	: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.	
NFPA fire hazard	: 1 - Materials that must be preheated before ignition can occur.	
NFPA reactivity	: 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.	$\checkmark$

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Hazard Rating	
Health	: 2 Moderate Hazard - Temporary or minor injury may occur
	* - Chronic (long-term) health effects may result from repeated overexposure
Flammability	<ul> <li>1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)</li> </ul>
Physical	: 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.
Personal protection	: B B - Safety glasses, Gloves

### SDS US (GHS HazCom 2012)

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