

## Silver Brazing Alloys

According to Regulation (EC) No.1907/2006 (REACH), Regulation (EC) No.453/2010 and Regulation (EC)No1272/2008-CLP  
Date of issue: May 30, 2015

Version: 1.4

### SECTION 1: Chemical product and company identification

#### 1.1 Product Identifier

Product form : Article  
Product Name : Silver Brazing alloys, Brazing alloys

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

##### 1.2.1 Relevant identified uses

Industrial/Professional use spec. : Industrial  
For professional use only  
Use of the substance/mixture : Brazing  
Function or use category : Brazing agent

##### 1.2.2 Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Coining, Inc.  
15 Mercedes Drive  
Montvale, NJ 07645  
Tel: +1(201)7914020  
[www.coininginc.com](http://www.coininginc.com)  
[martin.oud@ametek.com](mailto:martin.oud@ametek.com)

#### 1.4. Emergency Telephone Number

Emergency Number : CHEMTREC: 800-424-9300 for US/703-527-3887 outside US  
For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call  
CHEMTREC-Day of Night.

### SECTION 2: Hazards identification

#### 2.1. Classification of the Substances or Mixture

Classification according to Directive 67/548/EEC, Regulation (EC)No1272/2008-CLP

: Skin sens. (cat 1)  
Carcinogenicity (cat 2)  
Specific Target Organ Toxicity-Repeated exposure (cat 1)

#### Adverse physicochemical, human health and environmental effects

No additional information available.

#### 2.2. Label Elements

Labeling according to Directive 67/548/EEC, Regulation (EC)No1272/2008-CLP

##### Hazard Pictograms GHS



Signal Word: Danger

##### Hazard Statements

H317 May cause allergic skin reaction

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H351 Suspect of causing cancer  
H372 Causes damage to organs through prolonged or repeated exposure

## Precautionary Statements

P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
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  
P362 Take off contaminated clothing and wash before reuse.  
P501 Dispose of contents/container in accordance with local, regional, national and international regulations.

## 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixture

Name	Product Identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Gold	(CAS No) 7440-57-5 (EC no) 231-165-9;933-944-5	10-100	Solid Not Classified
Copper	(CAS No) 7440-50-8 (EC no) 231-159-6;918-168-7	0.1-100	Solid Not Classified
Tin	(CAS No) 7440-31-5 (EC no) 231-141-8	0.1-90	Solid Not Classified
Silver	(CAS No) 7440-22-4 (EC no) 231-131-3	0.1-50	Solid Not Classified
Indium	(CAS No) 7440-74-6 (EC no) 231-180-0	0.1-20	Solid Not Classified
Nickel	(CAS No) 7440-02-0 (EC no) 231-111-4 (EC index no) 028-002-00-7	0.1-20	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372
Zinc	(CAS No) 7440-66-6 (EC no) 231-175-3	0.1-30	Eye Irrit. 2, H319 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Palladium	(CAS No) 7440-05-3 (EC no) 231-115-6	0.1 - 30	Solid Not Classified
Phosphorous elemental	(CAS No) 7723-14-0 (EC no) 231-768-7	0.1-5	In solid alloy_ Aquatic Chronic 3, H412

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Full text of H- and EUH-phrases: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show there label where possible).
- First-aid measures after inhalation : When symptoms occur; go into open air and ventilate suspected area.
- First-aid measures after skin contact : Removal of solidified molten material from skin requires medical assistance. Cool skin rapidly with cold water after contact with molten product
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting.

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

- Symptoms/injuries : Under normal conditions of use not expected to present a significant hazard. Under milling, or physical alteration metal dusts may be produced that cause irritation of the respiratory tract, skin, and may be harmful. Molten material may release toxic and irritating fumes.
- Symptoms/injuries after inhalation : Not expected to be a primary route of exposure. The primary acute health hazard associated with this product would be the potential for exposure to fumes during metal processing operations. Inhalation of dusts and fumes can cause metal fume fever. Symptoms can include a metallic or sweet taste in the mouth, sweating, shivering, headache, throat irritation, fever, chills, thirstiness, muscle aches, nausea, vomiting, weakness, fatigue, and shortness of breath.
- Symptoms/injuries after skin contact : Skin contact is not considered a potential route of exposure. The primary acute health hazard associated with this product would be the potential for exposure to fumes during metal processing operations. Where possible allow molten material to solidify naturally. Removal of solidified molten material from skin requires medical assistance.
- Symptoms/injuries after eye contact : Not expected to be a primary route of exposure. Dust generated from material cutting may cause a slight irritation. Slivers may be generated, which could cause mechanical irritation or injure the eye.
- Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.
- Chronic symptoms : Tin: Has been shown to increase incidence of sarcoma in animal tests. Chronic exposure to tin dusts and fume may result in "stannosis", a mild form of pneumoconiosis.  
Silver: Chronic skin contact or ingestion of silver dust, salts or fume can result in a condition known as Argyria, a condition with bluish pigmentation of the skin and eyes.  
Indium: May cause damage to respiratory system.  
Copper: Overexposure to fumes may cause metal fume fever (chills, muscle aches, nausea, fever, dry throat, cough, weakness, lassitude); metallic or sweet

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taste; discoloration of skin and hair. Tissue damage of mucous membranes may follow chronic dust exposure.

Nickel: May cause a form of dermatitis known as nickel itch. Intestinal irritation, which may cause disorders, convulsions and asphyxia.

Zinc: Prolonged exposure to high concentrations of zinc fumes may cause "zinc shakes", an involuntary twitching of the muscles. Otherwise, zinc is non-toxic.

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

If medical advice is needed, have product container or label at hand.

## SECTION 5: Fire fighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Does not burn. Use extinguishing media appropriate for surrounding fire

Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Dust, chips, or ribbons can be ignited more easily, by an ignition source, by improper machining, or by spontaneous combustion if finely divided and damp

### 5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Handle in accordance with good industrial hygiene and safety practice.

#### 6.1.1. For non-emergency personnel

Protective equipment : Use appropriate personal protection equipment (PPE)

Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area

### 6.2. Environmental precautions

Avoid release to the environment

### 6.3. Methods and material for containment and clean up

For containment : If metal is in molten form, allow cooling and collecting as a solid. If the metal is in solid form collect for remelting purposes.

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Methods for cleaning up : Clear up spills. Immediately and dispose of waste safely.

## 6.4 Reference to other sections

See heading 8, exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Hygiene measures : Handle in accordance with good industrial hygiene and safety procedures.  
Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a dry, cool and well-ventilated place.

Incompatible products : Strong acids. Strong bases. Strong oxidizers.

### 7.3. Specific end use(s)

Brazing.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

<b>Copper (7440-50-8)</b>		
Austria	MAK (mg/m <sup>3</sup> )	0.4 mg/m <sup>3</sup>
Belgium	Limit value (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
France	VLE (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
France	VME (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Italy – Portugal – USA ACGHI	ACGIH TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup>
Latvia	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
Spain	VLA-ED (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
The Netherlands	MAC TGG 8H (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Hungary	AK-érték	0.1 mg/m <sup>3</sup>
Hungary	CK-érték	0.4 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Ireland	OEL (15 min ref) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Lithuania	IPRV (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup>
Romania	OEL TWA (mg/m <sup>3</sup> )	0.50mg/m <sup>3</sup>
Romania	OEL STEL (mg/m <sup>3</sup> )	1.50 mg/m <sup>3</sup>
Slovakia	NPHV (priemerná) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>

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Slovakia	NPHV (Hraničná) (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup>
Sweden	nivågränsvärde (NVG) (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup>
Portugal	OEL TWA (mg/m <sup>3</sup> )	1mg/m <sup>3</sup>

<b>Tin (7440-31-5)</b>		
Austria	MAK (mg/m <sup>3</sup> )	4 mg/m <sup>3</sup>
Belgium	Limit value (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Cyprus	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Italy – Portugal – USA ACGHI	ACGIH TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Spain	VLA-ED (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Malta	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Poland	NDS (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Portugal	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>

<b>Silver (7440-22-4)</b>		
Austria	MAK (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Belgium	Limit value (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Cyprus	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
France	VME (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup> (indicative limit)
Germany	TRGS 900 Occupational exposure limit value (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Italy – Portugal – USA ACGHI	ACGIH TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Italy	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Latvia	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
Spain	VLA-ED (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
The Netherlands	MAC TGG 8H (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	0.3 mg/m <sup>3</sup> (calculated)
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (mg/m <sup>3</sup> )	0.01 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Hungary	AK-érték	0.1 mg/m <sup>3</sup>
Hungary	CK-érték	0.4 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Lithuania	IPRV (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Poland	NDS (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
Romania	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Slovakia	NPHV (priemerná) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Sweden	nivågränsvärde (NVG) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>

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Portugal	OEL TWA (mg/m <sup>3</sup> )	0.1mg/m <sup>3</sup>
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<b>Indium (7440-74-6)</b>		
Austria	MAK (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup>
Belgium	Limit value (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Italy – Portugal – USA ACGHI	ACGIH TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Spain	VLA-ED (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	0.3 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Ireland	OEL (15 min ref) (mg/m <sup>3</sup> )	0.3 mg/m <sup>3</sup>
Lithuania	IPRV (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Sweden	nivågränsvärde (NVG) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Portugal	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>

<b>Nickel (7440-02-0)</b>		
Belgium	Limit value (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
France	VME (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (metal gratings)
Italy – Portugal – USA ACGHI	ACGIH TWA (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup>
Latvia	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
Spain	VLA-ED (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (manufacturing, commercialization, and use use restrictions under REACH)
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup> (calculated)
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Hungary	AK-érték	0.1 mg/m <sup>3</sup>
Hungary	CK-érték	0.1 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (mg/m <sup>3</sup> )	4 mg/m <sup>3</sup>
Lithuania	IPRV (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
Poland	NDS (mg/m <sup>3</sup> )	0.25 mg/m <sup>3</sup>
Romania	OEL TWA (mg/m <sup>3</sup> )	0.10mg/m <sup>3</sup>
Romania	OEL STEL (mg/m <sup>3</sup> )	0.50 mg/m <sup>3</sup>
Sweden	nivågränsvärde (NVG) (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
Portugal	OEL TWA (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup>
Portugal	OEL chemical category (PT)	A5 – Not Suspected as a Human Carcinogen

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<b>Palladium (7440-05-3)</b>		
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>

<b>Phosphorous elemental (7723-14-0)</b>		
Austria	MAK (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup>
Germany	TRGS 900 Occupational exposure limit value (mg/m <sup>3</sup> )	0.01 mg/m <sup>3</sup> (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Latvia	OEL TWA (mg/m <sup>3</sup> )	0.03 mg/m <sup>3</sup>
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Hungary	AK-érték	0.1 mg/m <sup>3</sup>
Hungary	CK-érték	0.1 mg/m <sup>3</sup>
Slovakia	NPHV (priemerná) (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
Slovakia	NPHV (Hraničná) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup> (Yellow, white)

## 8.2. Exposure controls

Appropriate engineering controls : Ensure adequate ventilation, especially in confined areas.

Personal protective equipment : Protective goggles. Insulated gloves



Hand protection : If material is hot, wear thermally resistant protective gloves.

Eye protection : During metal processing, chemical goggles or safety glasses.

Respiratory protection : During metal processing, wear approved mask.

Other information : When using, do not eat, drink or smoke.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basis physical and chemical properties

Physical state : Solid

Appearance : Preforms, squares, rings, discs, wire

Color : Metallic, silvery or coppery

Odor : Odorless

Odor threshold : Not applicable

pH : Neutral



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Relative evaporation rate (butylacetate=1)	: Not applicable
Melting point	: No data available
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 pressure at 20°C	: No data available
Relative density	: No data available
Solubility	: Insoluble
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 other information available.

## SECTION 10: Stability and reactivity

<b>10.1 Reactivity</b>	: Hazardous reactions will not occur under normal conditions.
<b>10.2 Chemical stability</b>	: Stable under normal conditions. Dust, chips or ribbons can be ignited more easily, by an ignition source, by improper machining, or by spontaneous combustion if finely divided and damp.
<b>10.3 Possibility of hazardous reactions</b>	: Hazardous polymerization will not occur.
<b>10.4 Conditions to avoid</b>	: Direct sunlight. Extremely high or low temperatures.
<b>10.5 Incompatible materials</b>	: Strong acids. Strong bases. Strong oxidizers.
<b>10.6. Hazardous decomposition products</b>	: Metal oxides.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Acute toxicity : Not classified

<b>Silver (7440-22-4)</b>	
LD50 oral rat	>2000 mg/kg

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<b>Phosphorous elemental (7723-14-0)</b>	
LD50 oral rat	3.03 mg/kg
Ld50 dermal rat	100 mg/kg
LC50 inhalation rat (mg/l)	4.3 mg/l (exposure time: 1h)

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

Irritation	: Not classified
Corrosivity	: Not classified
Sensitization	: Not classified
Repeated dose toxicity	: Not classified
Carcinogenicity	: Not classified
Mutagenicity	: Not classified
Toxicity for reproduction	: Not classified

## SECTION 12: Ecological information

### 12.1 Toxicity

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

<b>Silver (7440-22-4)</b>	
LC50 fishes 1	0.00155 (0.00155-0.00293)mg/l (Exposure time: 96 h-Species: Pimephales promelas [Static])
EC50 Daphnia 1	0.00024mg/l (Exposure time: 48h-Species: Daphnia magna [Static])
LC50 fish 2	0.0062mg/l (Exposure time: 96h –species: Oncorhynchus mykiss [flow-through])

<b>Zinc (7440-66-6)</b>	
LC50 fishes 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: 48h-Species: Daphnia magna [Static])

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EC50 other aquatic organisms 1	0.11-0.271 mg/l (Exposure time:96 h-Species: Pseudokirchneriella subcapitata [Static])
LC50 fish 2	0.211-0.269mg/l (Exposure time: 96h –species: Pimephales promelas [semi-static])
EC50 other aquatic organisms 2	0.09-0.125 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata [Static])

<b>Phosphorous elemental (7723-14-0)</b>	
LC50 fishes 1	0.0017-0.0035mg/l (Exposure time: 96 h-Species: Lepomis macrochirus [flow-through])
EC50 Daphnia 1	0.03mg/l (Exposure time: 48h-Species: Daphnia magna [Static])
LC50 fish 2	0.001-0.004mg/l (Exposure time: 96 h-Species: Lepomis macrochirus [Static])
EC50 other aquatic organisms 2	0.025-0.037) mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

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

## 12.2 Persistence and degradability

<b>Soldering and Brazing Alloys</b>	
Persistence and degradability	Not established

<b>Copper (7440-50-8)</b>	
Persistence and degradability	Not readily biodegradable.

## 12.3 Bioaccumulative potential

<b>Brazing Alloys</b>	
Bioaccumulative potential	Not established

## 12.4 Mobility in soil

No additional information available.

## 12.5 Results of PBT and vPvB assessment

No additional information available.

## 12.6 Other adverse effects

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Other information : Avoid release to the environment.

## SECTION 13: Disposal information

### 13.1 Waste treatment methods

Waste disposal recommendations : Dispose of waste material in accordance with all local, regional, national and international regulations.

## SECTION 14: Transport information

14.1. UN number : Not regulated for transport.

14.2. UN proper shipping name : Not applicable.

14.3. Transport hazard class(es) : Not applicable.

14.4. Packing group : Not applicable.

### 14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precaution for user : Not applicable

14.6.1. Overland transport : Not regulated for transport.

14.6.2. Air transport : Not regulated for transport.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

Authorizations and/or restrictions on use (Annex XVII):

27. Nickel	Nickel
40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2 substances and mixtures which, in contact with water, emit flammable gases, category 1,2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.	Phosphorus elemental

Contains no REACH candidate substances.

#### 15.1.2. National regulations

No additional information available.

### 15.2 Chemical safety assessment

No chemical safety assessment has been carried out.

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## SECTION 16: Other information

Other information : This Safety Data Sheet has been established in accordance with the applicable European Union legislation. Classification in accordance with calculation methods of regulation (EC)1272/2008 CLP/EC 1999/45 DPD.

Full text of R-, H- and EUH-phrases:

Acute Tox.1 (Inhalation: dust, mist)	Acute toxicity (inhalation: dust, mist) Category 1
Acute Tox.2 (Dermal)	Acute toxicity (dermal) Category 2
Acute Tox.3 (Oral)	Acute toxicity (oral) Category 2
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 3	Hazardous to the aquatic environment-Chronic Hazard Category 3
Carc.2	Carcinogenicity Category 2
Eye Irrit. 2	Serious eye damage/eye irritation Category 2
Flam. Sol. 1	Flammable solids Category 1
Pyr. Sol. 1	Pyrophoric solids Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT Se 3	Specific target organ toxicity (single exposure) Category 3
H228	Flammable solid
H250	Catches fire spontaneously if exposed to air
H300	Fatal if swallowed
H310	Fatal in contact with skin
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H330	Fatal if inhaled
H335	May cause respiratory irritation
H351	Suspected of causing 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
H412	Harmful to aquatic life with long lasting effects

SDS EU (REACH ANNEX II)

*This information is based on our current knowledge and is intended to describe the product for the purpose of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

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## STATEMENT OF LIABILITY-DISCLAIMER

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