

## Safety Data Sheet

### White metal with lead (FLS 410, Frederik VIII, Venus)

Replaces date: 5/23/2018

Revision date: 12/6/2021  
Version: 2.0.0

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

##### 1.1. Product identifier

**Trade name:** White metal with lead (FLS 410, Frederik VIII, Venus)

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

**Recommended uses:** Bearing metal.

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

###### Supplier

**Company:** Boliden Bergsøe A/S  
**Address:** Hvissingevej 116  
**Zip code:** 2600  
**City:** Glostrup  
**Country:** DENMARK  
**E-mail:** metal.glostrup@boliden.com  
**Phone:** +45 43268300

##### 1.4. Emergency Telephone Number

+45 43 26 83 00 (company)

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

**CLP-classification:** Repr. 1A;H360FD Lact.;H362 STOT RE 2;H373**Most serious harmful effects:** May damage fertility. May damage the unborn child. May cause harm to breast-fed children. May cause damage to organs through prolonged or repeated exposure. Harmful if vapours from molten metal are inhaled or if the skin comes in contact with molten metal. Prolonged or repeated exposure by skin contact or inhalation of vapours may cause damage to the central nervous system.

##### 2.2. Label elements

###### Contains

**Substance:** Lead;

###### H-phrases

The specific provisions on labelling laid down in section 1.3 of Annex I of the CLP Regulation apply to this product.

H360FD May damage fertility. May damage the unborn child.

H362 May cause harm to breast-fed children.

H373 May cause damage to organs through prolonged or repeated exposure.

###### Supplemental information

Restricted to professional users.

##### 2.3. Other hazards

No assessment required, as the product contains inorganic matter only.

## Safety Data Sheet

### White metal with lead (FLS 410, Frederik VIII, Venus)

Replaces date: 5/23/2018

Revision date: 12/6/2021

Version: 2.0.0

#### SECTION 3: Composition/information on ingredients

##### 3.2. Mixtures

Substance	CAS No./ EC No./ REACH Reg. No.	Concentration	Notes	CLP-classification
Tin	7440-31-5 231-141-8 01-2119486474-28-0024	0.2 - 98%		
Bismuth	7440-69-9 231-177-4	0.2 - 60%		
Indium- & compounds (as In)	7440-74-6 231-180-0	1 - 25%		
Antimony	7440-36-0 231-146-5 01-2119475609-24-0026	0.2 - 20%		
Copper	7440-50-8 231-159-6 01-2119480154-42-0184	< 10%		
Lead	7439-92-1 231-100-4 01-2119513221-59-0085	0.3 - 10%		Repr. 1A;H360FD Lact.;H362 STOT RE 1;H372

Please see section 16 for the full text of H- / EUH-phrases..

#### SECTION 4: First aid measures

##### 4.1. Description of first aid measures

<b>Inhalation:</b>	Seek fresh air. Seek medical advice in case of persistent discomfort.
<b>Ingestion:</b>	Wash out mouth thoroughly and drink 1-2 glasses of water in small sips. Seek medical advice in case of persistent discomfort.
<b>Skin contact:</b>	Remove contaminated clothing. Wash skin with soap and water. Seek medical advice in case of persistent discomfort.
<b>Eye contact:</b>	Flush with water (preferably using eye wash equipment) until irritation subsides. Seek medical advice if symptoms persist.
<b>General:</b>	When obtaining medical advice, show the safety data sheet or label.

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

May cause harm to breast-fed children. May damage fertility. May damage the unborn child. May cause damage to organs through prolonged or repeated exposure. Prolonged exposure to welding smoke and particles constitutes a risk of developing asthmatic diseases, various respiratory disorders and cancer of the respiratory system. Harmful if vapours from molten metal are inhaled or if the skin comes in contact with molten metal. Prolonged or repeated exposure by skin contact or inhalation of vapours may cause damage to the central nervous system.

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

Treat symptoms. No special immediate treatment required.

#### SECTION 5: Firefighting measures

##### 5.1. Extinguishing media

<b>Suitable extinguishing media:</b>	The product is not directly flammable. Choose extinguishing agents based on the surrounding fire.
<b>Unsuitable extinguishing</b>	Do not use water stream, as it may spread the fire.

## Safety Data Sheet

### White metal with lead (FLS 410, Frederik VIII, Venus)

Replaces date: 5/23/2018

Revision date: 12/6/2021  
Version: 2.0.0

media:

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

The product is not directly flammable. Avoid inhalation of vapour and fumes - seek fresh air.

#### 5.3. Advice for firefighters

Move containers from danger area if it can be done without risk. Avoid inhalation of vapour and flue gases - seek fresh air. Wear Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely.

### SECTION 6: Accidental release measures

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

**For non-emergency personnel:** Wear safety goggles if there is a risk of eye splash. In case of insufficient ventilation, wear respiratory protective equipment. Wear gloves. Stay upwind/keep distance from source.

**For emergency responders:** In addition to the above: Protective suit equivalent to EN 368, type 3, is recommended.

#### 6.2. Environmental precautions

Prevent spillage from entering drains and/or surface water.

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

Sweep up/collect spills for possible reuse or transfer to suitable waste containers.

#### 6.4. Reference to other sections

See section 8 for type of protective equipment. See section 13 for instructions on disposal.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Work under effective process ventilation (e.g. local exhaust ventilation). Running water and eye wash equipment must be available. Wash hands before breaks, before using restroom facilities, and at the end of work. A workplace assessment must be conducted to ensure that employees are not exposed to effects that may involve a risk during pregnancy. A workplace assessment must be conducted to ensure that employees are not exposed to effects that may involve a risk when breastfeeding.

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

Store safely, out of reach of children and away from food, animal feeding stuffs, medicines, etc. Store in a cool, dry place. Do not store with the following: Acids/ Alkalis/ Strong oxidisers/ Halogens.

#### 7.3. Specific end use(s)

None.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Occupational exposure limit

Substance name	Time period	ppm	mg/m <sup>3</sup>	fiber/cm <sup>3</sup>	Comments	Remarks
Lead	-		0.15			

## Safety Data Sheet

### White metal with lead (FLS 410, Frederik VIII, Venus)

Replaces date: 5/23/2018

Revision date: 12/6/2021  
Version: 2.0.0

**Measuring methods:** Compliance with occupational exposure limits may be checked by occupational hygiene measurements.

**Legal basis:** Commission Directive 2000/39/EC (Occupational Exposure Limits) as subsequently amended. Last amended by Commission Directive 2019/1831/EU. Directive 2004/37/EC (Exposure to carcinogens or mutagens at work) as subsequently amended. Last amended by Directive 2019/983/EU.

#### PNEC

Bismuth, cas-no 7440-69-9				
Exposure	Value	Assessment Factor	Extrapolation Method	Note
PNEC STP (wastewater-treatment facilities)	17,5 mg/l			
Antimony, cas-no 7440-36-0				
Exposure	Value	Assessment Factor	Extrapolation Method	Note
PNEC aqua (freshwater)	0,113 µg/l			
PNEC aqua (marine water)	0,0113 µg/l			
PNEC sediment (freshwater)	7,8 mg/kg dw			
PNEC sediment (marine water)	1,56 mg/kg dw			
PNEC soil	37 mg/kg dw			
PNEC STP (wastewater-treatment facilities)	2,55 g/l			
Lead, cas-no 7439-92-1				
Exposure	Value	Assessment Factor	Extrapolation Method	Note
PNEC aqua (freshwater)	2,4 µg/l			
PNEC aqua (marine water)	3,3 µg/l			
PNEC sediment (freshwater)	49,7 - 186 mg/kg dw			
PNEC sediment (marine water)	168 mg/kg dw			
PNEC STP (wastewater-treatment facilities)	0,1 mg/l			
Copper, cas-no 7440-50-8				
Exposure	Value	Assessment Factor	Extrapolation Method	Note
PNEC aqua (freshwater)	7,8 µg/l			
PNEC aqua (marine water)	5,2 µg/l			
PNEC sediment (freshwater)	87 mg/kg dw			
PNEC sediment	288 mg/kg dw			
PNEC sediment (marine water)	676 mg/kg dw			
PNEC soil	65,5 mg/kg dw			
PNEC STP (wastewater-treatment facilities)	230 g/l			

#### DNEL - workers

Bismuth, cas-no 7440-69-9					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note

## Safety Data Sheet

### White metal with lead (FLS 410, Frederik VIII, Venus)

Replaces date: 5/23/2018

Revision date: 12/6/2021  
Version: 2.0.0

Inhalation DNEL (long-term exposure - systemic effects)	13,1 mg/m <sup>3</sup>				
Antimony, cas-no 7440-36-0					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note
Dermal DNEL (long-term exposure - systemic effects)	281 mg/kg bw/day				
Inhalation DNEL (long-term exposure - local effects)	0,5 mg/m <sup>3</sup>				
Copper, cas-no 7440-50-8					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note
Dermal DNEL (long-term exposure - systemic effects)	0,041 mg/kg bw/day				
Inhalation DNEL (long-term exposure - systemic effects)	0,041 mg/kg bw/day				
Oral DNEL (long-term exposure - systemic effects)	0,041 mg/kg bw/day				
Dermal DMEL (acute/short-term exposure - systemic effects)	0,082 mg/kg bw/day				
Inhalation DNEL (acute/short-term exposure - systemic effects)	0,082 mg/kg bw/day				
Oral DMEL (acute/short-term exposure - systemic effects)	0,082 mg/kg bw/day				

#### DNEL - general population

Bismuth, cas-no 7440-69-9					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note
Oral DNEL (long-term exposure - systemic effects)	13,3 mg/kg bw/day				

#### 8.2. Exposure controls

##### Appropriate engineering controls:

Wear the personal protective equipment specified below.

##### Personal protective equipment, eye/face protection:

Wear safety goggles if there is a risk of eye splash. Eye protection must conform to EN 166.

##### Personal protective equipment, hand protection:

Wear protective gloves which protect against contact and splashing from molten metal. Gloves must conform to EN 12477.

##### Personal protective equipment, respiratory protection:

When heating/using the product without process ventilation, you must use respiratory equipment with B/P3 filter. Respiratory protection must conform to one of the following standards: EN 136/140/145.

##### Environmental exposure

Ensure compliance with local regulations for emissions.

## Safety Data Sheet

### White metal with lead (FLS 410, Frederik VIII, Venus)

Replaces date: 5/23/2018

Revision date: 12/6/2021  
Version: 2.0.0

controls:

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Parameter	Value/unit
State	Solid substance
Colour	Yellow / Grey
Odour	Characteristic
Solubility	Pb: 185 mg/L, Sb: 18,2 mg/L, Bi: 1,87 g/L

Parameter	Value/unit	Remarks
Odour threshold	No data	
Melting point	96 - 400 °C	
Freezing point	No data	
Initial boiling point and boiling range	> 600	
Flammability (solid, gas)	No data	
Flammability limits	No data	
Explosion limits	No data	
Flash Point	No data	
Auto-ignition temperature	No data	
Decomposition temperature	No data	
pH (solution for use)	No data	
pH (concentrate)	No data	
Kinematic viscosity	No data	
Viscosity	No data	
Partition coefficient n-octanol/water	No data	
Vapour pressure	No data	
Density	No data	
Relative density	7.2 - 11.3 g/ml	
Vapour density	No data	
Relative density (sat. air)	No data	
Particle characteristics	No data	

**9.2. Other information**

Parameter	Value/unit	Remarks
Explosive properties		Non-explosive
Oxidising properties		Non-oxidising.
Explosive properties		Non-explosive
Oxidising properties		Non-oxidising.

**Other Information:** None.**SECTION 10: Stability and reactivity****10.1. Reactivity**

Reacts with the following: Alkalis/ Acids/ Strong oxidisers/ Halogens.

**10.2. Chemical stability**

The product is stable when used in accordance with the supplier's directions.

## Safety Data Sheet

### White metal with lead (FLS 410, Frederik VIII, Venus)

Replaces date: 5/23/2018

Revision date: 12/6/2021  
Version: 2.0.0

#### 10.3. Possibility of hazardous reactions

None known.

#### 10.4. Conditions to avoid

None known.

#### 10.5. Incompatible materials

Alkalis/ Acids/ Strong oxidisers/ Halogens.

#### 10.6. Hazardous decomposition products

None known.

### SECTION 11: Toxicological information

#### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

##### Acute toxicity - oral

###### Tin, cas-no 7440-31-5

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 2000mg/kg		OECD 423	

###### Bismuth, cas-no 7440-69-9

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 2000mg/kg			

###### Antimony, cas-no 7440-36-0

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 20000mg/kg			

###### Copper, cas-no 7440-50-8

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 300mg/kg bw			

Ingestion may cause discomfort. The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

##### Acute toxicity - dermal

###### Tin, cas-no 7440-31-5

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 2000mg/kg		OECD 402	

###### Antimony, cas-no 7440-36-0

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rabbit	LD50		> 8300mg/kg			

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

##### Acute toxicity - inhalation

###### Tin, cas-no 7440-31-5

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 5mg/l		OECD 403	

###### Antimony, cas-no 7440-36-0

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LC50		> 5.5mg/m <sup>3</sup>			



## Safety Data Sheet

### White metal with lead (FLS 410, Frederik VIII, Venus)

Replaces date: 5/23/2018

Revision date: 12/6/2021  
Version: 2.0.0

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met. The product does not release hazardous vapours in metallic form. Metallic oxides which are hazardous to inhale are formed during soldering/welding.

#### Skin corrosion/irritation

##### Tin, cas-no 7440-31-5

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rabbit				Non-irritating		

May cause slight irritation. The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

#### Serious eye damage/eye irritation

##### Tin, cas-no 7440-31-5

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rabbit				Non-irritating		

May cause eye irritation. The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

#### Respiratory sensitisation or skin sensitisation:

The product does not have to be classified. Test data are not available.

#### Germ cell mutagenicity:

The product does not have to be classified. Test data are not available.

#### Carcinogenic properties:

The product contains at least one substance that is suspected of being carcinogenic. The product does not have to be classified. Test data are not available.

#### Reproductive toxicity:

May damage fertility. May damage the unborn child. May cause harm to breast-fed children.

#### Single STOT exposure:

Inhalation of smoke from the soldering / welding process may cause irritation to the upper airways. May cause a burning sensation in the nose, mouth and throat, as well as headaches, coughing and discomfort. The product does not have to be classified. Test data are not available.

#### Repeated STOT exposure:

May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may cause water in the lungs. Prolonged exposure to welding smoke and particles constitutes a risk of developing asthmatic diseases, various respiratory disorders and cancer of the respiratory system. Prolonged or repeated exposure by skin contact or inhalation of vapours may cause damage to the central nervous system.

#### Aspiration hazard:

The product does not have to be classified. Test data are not available.

### 11.2. Information on other hazards

#### Endocrine disrupting properties:

None known.

#### Other toxicological effects:

None known.

## SECTION 12: Ecological information

### 12.1. Toxicity

#### Tin, cas-no 7440-31-5

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
Fish	Pimephales promelas		96hLC50	> 12.4µg/l		OECD 203	



## Safety Data Sheet

### White metal with lead (FLS 410, Frederik VIII, Venus)

Replaces date: 5/23/2018

Revision date: 12/6/2021

Version: 2.0.0

Crustacea	Daphnia magna		7dEC50	> 3200µg/l			
Algae	Pseudokirchneriella subcapitata		72hEC50	> 19.2µg/l		OECD 201	

#### Antimony, cas-no 7440-36-0

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
Fish	Pimephales promelas		96hLC50	14.4mg/l			
Algae	Pseudokirchneriella subcapitata		72hErC50	> 36.6mg/l			
Fish	Pimephales promelas		28dNOEC	1.13 - 2.31mg/l			
Crustacea	Daphnia magna		21dNOEC	1.74 - 3.13mg/l			
Algae	Pseudokirchneriella subcapitata		72hNOEC	2.11 - 4.00mg/l			
Crustacea	Chlorohydra viridissima		96hEC50	1.77mg/l			
Fish	Pagrus major		96hLC50	6.9mg/l			
Algae or other aquatic plants	Lemna minor		4dEC50	> 25.5mg/l			

#### Lead, cas-no 7439-92-1

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
Fish	Pimephales promelas Oncorhynchus mykiss		96hLC50	40.8 - 810.0µg/l			
Crustacea	Daphnia magna Ceriodaphnia dubia		48hEC50	26.4 - 3115.8µg/l			
Algae	Pseudokirchneriella subcapitata Chlorella kesslerii		72hErC50	20.5 - 49.6µg/l			
Fish	Oncorhynchus mykiss		10dNOEC	17.8 - 1558.6µg/l			
Crustacea	Hyallolella azteca		10dNOEC	1.7 - 963.0µg/l			
Algae	Pseudokirchneriella subcapitata		10dNOEC	0.48 - 190.0µg/l			

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

#### 12.2. Persistence and degradability

#### 12.3. Bioaccumulative potential

##### Tin, cas-no 7440-31-5

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
			Log Kd:	2.1 - 4.3			

##### Antimony, cas-no 7440-36-0

## Safety Data Sheet

### White metal with lead (FLS 410, Frederik VIII, Venus)

Replaces date: 5/23/2018

Revision date: 12/6/2021

Version: 2.0.0

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
			Log Kp	2.07			

Bioaccumulation can be expected.

#### 12.4. Mobility in soil

Test data are not available.

#### 12.5. Results of PBT and vPvB assessment

No assessment required, as the product contains inorganic matter only.

#### 12.6. Endocrine disrupting properties

None known.

#### 12.7. Other adverse effects

None known.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Avoid discharge to drain or surface water.

If this product as supplied becomes a waste, it meets the criteria of a hazardous waste (Dir. 2008/98/EU). Collect spills and waste in closed, leak-proof containers for disposal at the local hazardous waste site.

Empty, cleansed packaging should be disposed of for recycling. Uncleansed packaging is to be disposed of via the local waste-removal scheme.

#### Category of waste:

EWC code: Depends on line of business and use, for instance 06 04 05\* wastes containing other heavy metals

Absorbent/cloth contaminated with the product: 15 02 02\* absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing

### SECTION 14: Transport information

14.1. UN number or ID number: Not applicable.

14.4. Packing group: Not applicable.

14.2. UN proper shipping name: Not applicable.

14.5. Environmental hazards: Not applicable.

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

#### 14.6. Special precautions for user

None.

#### 14.7. Maritime transport in bulk according to IMO instruments

Not included.

### SECTION 15: Regulatory information

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

#### Special Provisions:

Regulation (EU) of the European Parliament and of the Council concerning the export and import of hazardous chemicals.

Special care should be applied for employees under the age of 18. Young people under the age of 18 may not carry out any work causing harmful exposure to this product.

Covered by:

## Safety Data Sheet

### White metal with lead (FLS 410, Frederik VIII, Venus)

Replaces date: 5/23/2018

Revision date: 12/6/2021  
Version: 2.0.0

The product is comprised by Regulation 1907/2006/EC, Annex XVII concerning restrictions.

Council Directive (EC) on the protection of young people at work.  
Council Directive (EC) on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding.

#### 15.2. Chemical Safety Assessment

REACH Reg. No.	Substance name
01-2119475609-24-0026	Antimony
01-2119480154-42-0184	Copper
01-2119486474-28-0024	Tin

#### SECTION 16: Other information

##### Version history and indication of changes

Version	Revision date	Responsible	Changes
2.0.0	12/6/2021	Bureau Veritas HSE / MPE	1 - 16

##### Abbreviations:

STOT: Specific Target Organ Toxicity  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: Very Persistent and Very Bioaccumulative  
DNEL: Derived No Effect Level  
PNEC: Predicted No Effect Concentration

##### Other Information:

This safety data sheet has been prepared for and applies to this product only. It is based on our current knowledge and the information that the supplier was able to provide about the product at the time of preparation. The safety data sheet complies with applicable law on preparation of safety data sheets in accordance with 1907/2006/EC (REACH) as subsequently changed.

##### Training advice:

A thorough knowledge of this safety data sheet should be a prerequisite condition.

##### Classification method:

Calculation based on the hazards of the known components.

##### List of relevant H-statements

H360FD May damage fertility. May damage the unborn child.  
H362 May cause harm to breast-fed children.  
H372 Causes damage to organs through prolonged or repeated exposure.  
H373 May cause damage to organs through prolonged or repeated exposure.

##### SDS is prepared by

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EU