

# SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2020/878

## SUPERSOLDER

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

#### 1.1. Product identifier

Product name : SUPERSOLDER  
Registration number REACH : Not applicable (mixture)  
Product type REACH : Mixture/alloy

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

##### 1.2.1 Relevant identified uses

Solder  
Professional use

##### 1.2.2 Uses advised against

No uses advised against known

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

##### Supplier of the safety data sheet

Novatio\*  
Industrielaan 5B  
B-2250 Olen  
☎ +32 14 25 76 40  
☎ +32 14 22 02 66  
info@novatio.be  
\*NOVATIO is a registered trademark of Novatech International N.V.

##### Manufacturer of the product

Novatech International N.V.  
Industrielaan 5B  
B-2250 Olen  
☎ +32 14 85 97 37  
☎ +32 14 85 97 38  
info@novatech.be

#### 1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch) :  
+32 14 58 45 45 (BIG)

### SECTION 2: Hazards identification

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

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

| Class   | Category    | Hazard statements  |
|---------|-------------|--|
| Repr.   | category 1A | H360FD: May damage fertility. May damage the unborn child.   |
| Lact.   | -           | H362: May cause harm to breast-fed children.   |
| STOT RE | category 2  | H373: May cause damage to organs (blood, central nervous system, kidneys) through prolonged or repeated exposure if inhaled.   |
| STOT RE | category 2  | H373: May cause damage to organs (blood, central nervous system, kidneys) through prolonged or repeated exposure if swallowed. |

#### 2.2. Label elements

This substance/mixture, although classified dangerous, does not require a label because of the form in which it is placed on the market (Regulation (EC) No 1272/2008 Annex I chapter 1.3.4)

##### Supplemental information

Restricted to professional users.

#### 2.3. Other hazards

The criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006 do not apply to inorganic substances

Heated product causes skin burns  
Heated product causes eye burns  
Caution! Substance is absorbed through the skin

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## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Name<br>REACH Registration No                              | CAS No<br>EC No        | Conc. (C) | Classification according to CLP                     | Note             | Remark      | M-factors and<br>ATE |
|--|------------------------|-----------|---|------------------|-------------|----------------------|
| lead massive: [particle diameter ≥1mm]<br>01-2119513221-59 | 7439-92-1<br>231-100-4 | 5%<C<10%  | Repr. 1A; H360FD<br>Lact. ; H362<br>STOT RE 1; H372 | (1)(2)(4)(6)(10) | Constituent |                      |
| tin<br>01-2119486474-28                                    | 7440-31-5<br>231-141-8 | 0%<C<95%  |   | (2)(10)          | Constituent |                      |
| antimony<br>01-2119475609-24                               | 7440-36-0<br>231-146-5 | 0%<C<5%   |   | (2)(10)          | Constituent |                      |
| copper<br>01-2119480154-42                                 | 7440-50-8<br>231-159-6 | 0%<C<5%   |   | (2)(10)          | Constituent |                      |
| bismuth  | 7440-69-9<br>231-177-4 | 0%<C<5%   |   |                  | Constituent |                      |
| silver<br>01-2119555669-21                                 | 7440-22-4<br>231-131-3 | 0%<C<12%  |   | (2)              | Constituent |                      |
| zinc<br>01-2119467174-37                                   | 7440-66-6<br>231-175-3 | 0%<C<25%  |   | (10)             | Constituent |                      |

(1) For H- and EUH-statements in full: see section 16

(2) Substance with a Community workplace exposure limit

(4) Enumerated in candidate list of substances of very high concern (SVHC) for authorisation (Article 59 of Regulation (EC) No. 1907/2006)

(6) Enumerated in Annex VI of Regulation (EC) No. 1272/2008 but the classification has been adapted after evaluation of available test data

(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General:

Observe (own) safety. If possible, approach victim and check vital functions. In case of injury and/or intoxication, call the European emergency number 112. Treat symptoms starting with most life-threatening injuries and disorders. Keep victim under observation, possibility of delayed symptoms.

#### After inhalation:

Remove victim into fresh air. In case of respiratory problems, consult a doctor/medical service.

#### After skin contact:

If possible, wipe up/dry remove chemical. Then rinse/shower immediately with (lukewarm) water. If irritation persists, consult a doctor/medical service. In case of burns: Wash immediately with lots of water (15 minutes)/shower. Remove clothing while washing. Do not tear off solidified product from the skin. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

#### After eye contact:

After contact with fume: Rinse immediately with (lukewarm) water. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, consult a doctor/medical service. In case of burns: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist.

#### After ingestion:

Rinse mouth with water. If you feel unwell, consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

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

#### 4.2.1 Acute symptoms

##### After inhalation:

ON HEATING: AFTER INHALATION OF FUME: Metal fume fever. Feeling of weakness. Body temperature rise. Headache. Nausea. Vomiting. Metal taste. Muscular pain. Rapid respiration. Respiratory difficulties. Possible oedema of the upper respiratory tract. Risk of lung oedema. Respiratory collapse.

##### After skin contact:

If molten: burns.

##### After eye contact:

If molten: burns. Visual disturbances.

##### After ingestion:

No effects known.

#### 4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### 5.1.1 Suitable extinguishing media:

Adapt extinguishing media to the environment for surrounding fires.

#### 5.1.2 Unsuitable extinguishing media:

Not applicable.

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

On burning: formation of metal oxides e.g.: lead oxides. In molten state: reacts violently with water (moisture).

### 5.3. Advice for firefighters

#### 5.3.1 Instructions:

Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

#### 5.3.2 Special protective equipment for fire-fighters:

Gloves (EN 374). Protective clothing (EN 14605 or EN 13034). Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

## SECTION 6: Accidental release measures

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

No naked flames.

#### 6.1.1 Protective equipment for non-emergency personnel

See section 8.2

#### 6.1.2 Protective equipment for emergency responders

Gloves (EN 374). Protective clothing (EN 14605 or EN 13034).

Suitable protective clothing

See section 8.2

### 6.2. Environmental precautions

Contain released product. Dam up the solid spill. Prevent soil and water pollution. Prevent spreading in sewers.

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

If melted: allow liquid to solidify before taking it up. Pick-up the material. Take collected spill to manufacturer/competent authority. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

### 6.4. Reference to other sections

See section 13.

## SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 7.1. Precautions for safe handling

Keep away from naked flames/heat. Observe very strict hygiene - avoid contact. Remove contaminated clothing immediately. Do not discharge the waste into the drain. Keep container tightly closed.

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

#### 7.2.1 Safe storage requirements:

Store in a cool area. Store in a dry area. Meet the legal requirements.

#### 7.2.2 Keep away from:

Heat sources, (strong) acids, (strong) bases, oxidizing agents, combustible materials.

#### 7.2.3 Suitable packaging material:

No data available

#### 7.2.4 Non suitable packaging material:

No data available

### 7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1 Occupational exposure

##### a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

#### EU

|                                  |   |                        |
|----------------------------------|---|------------------------|
| Inorganic lead and its compounds | Time-weighted average exposure limit 8 h (Limit value for occupational exposure)        | 0.15 mg/m <sup>3</sup> |
| Silver, metallic                 | Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value) | 0.1 mg/m <sup>3</sup>  |

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|                                 |   |                     |
|---------------------------------|---|---------------------|
| Tin (inorganic compounds as Sn) | Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value) | 2 mg/m <sup>3</sup> |
|---------------------------------|---|---------------------|

## Belgium

|   |  |                        |
|---|--|------------------------|
| Antimoine et ses composés (en Sb)             | Time-weighted average exposure limit 8 h | 0.5 mg/m <sup>3</sup>  |
| Argent (métal)                                | Time-weighted average exposure limit 8 h | 0.1 mg/m <sup>3</sup>  |
| Cuivre (fumées) (en Cu)                       | Time-weighted average exposure limit 8 h | 0.2 mg/m <sup>3</sup>  |
| Cuivre (poussières et brouillards de) (en Cu) | Time-weighted average exposure limit 8 h | 1 mg/m <sup>3</sup>    |
| Etain (métal)                                 | Time-weighted average exposure limit 8 h | 2 mg/m <sup>3</sup>    |
| Plomb inorg. (poussières et fumées) (en Pb)   | Time-weighted average exposure limit 8 h | 0.15 mg/m <sup>3</sup> |

## The Netherlands

|  |   |                        |
|--|---|------------------------|
| Antimoon en -verbindingen (als Sb)                     | Time-weighted average exposure limit 8 h (Public occupational exposure limit value) | 0.099 ppm              |
|  | Time-weighted average exposure limit 8 h (Public occupational exposure limit value) | 0.5 mg/m <sup>3</sup>  |
| Koper en anorganische koperverbindingen (inhaleerbaar) | Time-weighted average exposure limit 8 h (Public occupational exposure limit value) | 0.038 ppm              |
|  | Time-weighted average exposure limit 8 h (Public occupational exposure limit value) | 0.1 mg/m <sup>3</sup>  |
| Lood en anorganische loodverbindingen                  | Time-weighted average exposure limit 8 h (Public occupational exposure limit value) | 0.017 ppm              |
|  | Time-weighted average exposure limit 8 h (Public occupational exposure limit value) | 0.15 mg/m <sup>3</sup> |
| Tin (anorganische verbindingen als Sn)                 | Time-weighted average exposure limit 8 h (Public occupational exposure limit value) | 0.41 ppm               |
|  | Time-weighted average exposure limit 8 h (Public occupational exposure limit value) | 2 mg/m <sup>3</sup>    |
| Zilver, metallisch                                     | Time-weighted average exposure limit 8 h (Public occupational exposure limit value) | 0.022 ppm              |
|  | Time-weighted average exposure limit 8 h (Public occupational exposure limit value) | 0.1 mg/m <sup>3</sup>  |

## France

|                                     |  |                       |
|-------------------------------------|--|-----------------------|
| Antimoine et ses composés, en Sb    | Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative) | 0.5 mg/m <sup>3</sup> |
| Argent (métallique)                 | Time-weighted average exposure limit 8 h (VRI: Valeur réglementaire indicative)    | 0.1 mg/m <sup>3</sup> |
| Cuivre (fumées)                     | Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative) | 0.2 mg/m <sup>3</sup> |
| Cuivre (poussières), en Cu          | Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative) | 1 mg/m <sup>3</sup>   |
|                                     | Short time value (VL: Valeur non réglementaire indicative)                         | 2 mg/m <sup>3</sup>   |
| Plomb métallique et composés, en Pb | Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante) | 0.1 mg/m <sup>3</sup> |

## Germany

|   |   |                       |
|---|---|-----------------------|
| Blei und anorganischen Bleiverbindungen | Time-weighted average exposure limit 8 h (TRGS 505) | 150 µg/m <sup>3</sup> |
| Silber                                  | Time-weighted average exposure limit 8 h (TRGS 900) | 0.1 mg/m <sup>3</sup> |

## Austria

|   |                               |                       |
|---|-------------------------------|-----------------------|
| Antimon   | Tagesmittelwert (MAK)         | 0.5 mg/m <sup>3</sup> |
|   | Kurzzeitwert 30(Miw) 1x (MAK) | 5 mg/m <sup>3</sup>   |
| Blei und seine Verbindungen außer Bleiarsenat, Bleichromat, Bleichromatoxid und Alkylbleiverbindungen | Tagesmittelwert (MAK)         | 0.1 mg/m <sup>3</sup> |
|   | Kurzzeitwert 15(Miw) 4x (MAK) | 0.4 mg/m <sup>3</sup> |
| Kupfer und seine Verbindungen(als Rauch)  | Tagesmittelwert (MAK)         | 0.1 mg/m <sup>3</sup> |
|   | Kurzzeitwert 15(Miw) 4x (MAK) | 0.4 mg/m <sup>3</sup> |
| Kupfer und seine Verbindungen   | Tagesmittelwert (MAK)         | 1 mg/m <sup>3</sup>   |
|   | Kurzzeitwert 15(Miw) 4x (MAK) | 4 mg/m <sup>3</sup>   |
| Silber  | Tagesmittelwert (MAK)         | 0.1 mg/m <sup>3</sup> |
|   | Kurzzeitwert 30(Miw) 1x (MAK) | 0.1 mg/m <sup>3</sup> |
| Zinn  | Tagesmittelwert (MAK)         | 2 mg/m <sup>3</sup>   |
|   | Kurzzeitwert 15(Miw) 4x (MAK) | 4 mg/m <sup>3</sup>   |

## UK

|             |   |                       |
|-------------|---|-----------------------|
| Antimony    | Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005)) | 0.5 mg/m <sup>3</sup> |
| Copper fume | Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005)) | 0.2 mg/m <sup>3</sup> |

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|                             |  |                        |
|-----------------------------|--|------------------------|
| Lead other than lead alkyls | Time-weighted average exposure limit 8 h (Occupational exposure limit (Control of lead at work)) | 0.15 mg/m <sup>3</sup> |
| Silver, metallic            | Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))                  | 0.1 mg/m <sup>3</sup>  |

## USA (TLV-ACGIH)

|  |  |                         |
|--|--|-------------------------|
| Antimony and compounds, as Sb  | Time-weighted average exposure limit 8 h (TLV - Adopted Value) | 0.5 mg/m <sup>3</sup>   |
| Copper dusts and mists, as Cu  | Time-weighted average exposure limit 8 h (TLV - Adopted Value) | 1 mg/m <sup>3</sup>     |
| Copper fume, as Cu   | Time-weighted average exposure limit 8 h (TLV - Adopted Value) | 0.2 mg/m <sup>3</sup>   |
| Lead and inorganic compounds, as Pb  | Time-weighted average exposure limit 8 h (TLV - Adopted Value) | 0.05 mg/m <sup>3</sup>  |
| Silver, and compounds: Metal, dust and fume                                    | Time-weighted average exposure limit 8 h (TLV - Adopted Value) | 0.1 mg/m <sup>3</sup>   |
| Tin and inorganic compounds, excluding Tin hydride and Indium tin oxide, as Sn | Time-weighted average exposure limit 8 h (TLV - Adopted Value) | 2 mg/m <sup>3</sup> (I) |

(I): Inhalable fraction

## b) National biological limit values

If limit values are applicable and available these will be listed below.

### Belgium

|                                       |      |             |  |
|---------------------------------------|------|-------------|--|
| Plomb et ses composés ioniques (Lood) | sang | 70 µg/100ml |  |
|---------------------------------------|------|-------------|--|

### Germany

|             |                              |          |   |
|-------------|------------------------------|----------|---|
| Blei (Blei) | Vollblut: keine beschränkung | 150 µg/l | Dieser Wert gilt nicht für Beschäftigte im gebärfähigen Alter. Die Regelungen des Mutterschutzgesetzes bleiben unberührt. Beschäftigungsbeschränkungen sind in Abschnitt 7, Verwendungsverbote in Abschnitt 6 aufgeführt. |
|-------------|------------------------------|----------|---|

### USA (BEI-ACGIH)

|                                     |                     |          |  |
|-------------------------------------|---------------------|----------|--|
| Lead and inorganic compounds (Lead) | Blood: not critical | 200 µg/L | Persons applying this BEI® are encouraged to counsel female workers of child-bearing age about the risk of delivering a child with a PbB over the current CDC reference value. |
|-------------------------------------|---------------------|----------|--|

## 8.1.2 Sampling methods

| Product name                                       | Test  | Number  |
|--|-------|---------|
| elemental lead, lead compounds (except alkyl lead) | NIOSH | 7701    |
| Lead (Elements on wipes)                           | NIOSH | 9102    |
| Lead (Elements)                                    | NIOSH | 7300    |
| Lead (Elements, aqua regia ashing)                 | NIOSH | 7301    |
| Lead (Elements, hot block/HCl/HNO3 digestion)      | NIOSH | 7303    |
| Lead (in dust wipes)                               | NIOSH | 9105    |
| Lead (Pb)  | NIOSH | 7302    |
| Lead (Pb)  | NIOSH | 7304    |
| Lead (Pb)  | NIOSH | 7306    |
| Lead (Pb)  | NIOSH | 8005    |
| Lead (Pb)  | NIOSH | 8310    |
| Lead bij field portable XRF                        | NIOSH | 7702    |
| Lead on surfaces                                   | NIOSH | 9100    |
| Lead, inorganic (as Pb)                            | OSHA  | 5003    |
| Lead   | NIOSH | 7082    |
| Lead   | NIOSH | 7105    |
| Lead   | NIOSH | 8003    |
| Lead   | OSHA  | 1006    |
| Lead   | OSHA  | ID 121  |
| Lead   | OSHA  | ID 125G |
| Lead   | OSHA  | ID 206  |
| Tin (Elements)                                     | NIOSH | 7300    |
| Tin (Elements, aqua regia ashing)                  | NIOSH | 7301    |
| Tin (Elements, hot block/HCl/HNO3 digestion)       | NIOSH | 7303    |
| Tin (Sn)   | NIOSH | 7302    |
| Tin (Sn)   | NIOSH | 7306    |
| Tin (Sn)   | NIOSH | 8310    |
| Tin  | OSHA  | ID 121  |
| Tin  | OSHA  | ID 206  |

## 8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

## 8.1.4 Threshold values

### DNEL/DMEL - Workers

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| Effect level (DNEL/DMEL) | Type                                  | Value                | Remark |
|--------------------------|---------------------------------------|----------------------|--------|
| DNEL                     | Long-term systemic effects inhalation | 71 mg/m <sup>3</sup> |        |
|                          | Long-term systemic effects dermal     | 10 mg/kg bw/day      |        |

DNEL/DMEL - General population

tin

| Effect level (DNEL/DMEL) | Type                                  | Value                | Remark |
|--------------------------|---------------------------------------|----------------------|--------|
| DNEL                     | Long-term systemic effects inhalation | 17 mg/m <sup>3</sup> |        |
|                          | Long-term systemic effects dermal     | 80 mg/kg bw/day      |        |
|                          | Long-term systemic effects oral       | 5 mg/kg bw/day       |        |

PNEC

lead massive: [particle diameter ≥1mm]

| Compartments          | Value                 | Remark |
|-----------------------|-----------------------|--------|
| Fresh water           | 2.4 µg/l              |        |
| Marine water          | 3.3 µg/l              |        |
| STP                   | 100 µg/l              |        |
| Fresh water sediment  | 186 mg/kg sediment dw |        |
| Marine water sediment | 168 mg/kg sediment dw |        |
| Soil                  | 212 mg/kg soil dw     |        |
| Oral                  | 10.9 mg/kg food       |        |

## 8.1.5 Control banding

If applicable and available it will be listed below.

## 8.2. Exposure controls

This safety data sheet is consistent with the specific conditions relied on to justify the registration in accordance with Article 17 or 18 of Regulation (EC) No. 1907/2006.

Following general controls are applicable: Periodic medical examination of workers exposed to lead is necessary.

### 8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

### 8.2.2 Individual protection measures, such as personal protective equipment

Observe very strict hygiene - avoid contact. Do not eat, drink or smoke during work.

#### a) Respiratory protection:

Dust production: dust mask with filter type P2.

#### b) Hand protection:

Protective gloves against chemicals (EN 374), On heating: heat insulating gloves (EN 407).

#### c) Eye protection:

Safety glasses (EN 166).

#### d) Skin protection:

Protective clothing (EN 14605 or EN 13034).

### 8.2.3 Environmental exposure controls:

See sections 6.2, 6.3 and 13

## SECTION 9: Physical and chemical properties

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

|                           |   |
|---------------------------|---|
| Physical form             | Solid<br>Metal<br>May be present in various forms |
| Odour                     | Odourless   |
| Odour threshold           | Not applicable                                    |
| Colour                    | Grey  |
| Particle size             | No data available in the literature               |
| Explosion limits          | No data available in the literature               |
| Flammability              | Not classified as flammable                       |
| Log Kow                   | Not applicable (mixture)                          |
| Dynamic viscosity         | Not applicable (solid)                            |
| Kinematic viscosity       | Not applicable (solid)                            |
| Melting point             | 178 °C - 325 °C                                   |
| Boiling point             | > 600 °C  |
| Relative vapour density   | Not applicable (solid)                            |
| Vapour pressure           | Not applicable (solid)                            |
| Solubility                | Water ; insoluble                                 |
| Relative density          | 7.5 - 11.2  |
| Absolute density          | 7500 kg/m <sup>3</sup> - 11200 kg/m <sup>3</sup>  |
| Decomposition temperature | No data available in the literature               |
| Auto-ignition temperature | No data available in the literature               |
| Flash point               | Not applicable (solid)                            |
| pH                        | Not applicable (non-soluble in water)             |

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## 9.2. Other information

No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No data available.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

In molten state: reacts violently with water (moisture).

### 10.4. Conditions to avoid

#### Precautionary measures

Keep away from naked flames/heat.

### 10.5. Incompatible materials

(strong) acids, (strong) bases, oxidizing agents, combustible materials.

### 10.6. Hazardous decomposition products

Reacts with (some) acids/bases: release of highly flammable gases/vapours (hydrogen). On burning: formation of metal oxides e.g.: lead oxides.

## SECTION 11: Toxicological information

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

#### 11.1.1 Test results

#### Acute toxicity

##### SUPERSOLDER

No (test)data on the mixture available

Judgement is based on the relevant ingredients

lead massive: [particle diameter  $\geq 1\text{mm}$ ]

| Route of exposure | Parameter | Method   | Value           | Exposure time | Species             | Value determination | Remark |
|-------------------|-----------|----------|-----------------|---------------|---------------------|---------------------|--------|
| Oral              | LD50      | OECD 423 | > 2000 mg/kg bw |               | Rat (male / female) | Experimental value  |        |
| Dermal            | LD50      | OECD 402 | > 2000 mg/kg bw | 24 h          | Rat (male / female) | Experimental value  |        |
| Inhalation (dust) | LC50      | OECD 403 | > 5.05 mg/l     | 4 h           | Rat (male / female) | Experimental value  |        |

tin

| Route of exposure | Parameter | Method                 | Value           | Exposure time | Species             | Value determination | Remark |
|-------------------|-----------|------------------------|-----------------|---------------|---------------------|---------------------|--------|
| Oral              | LD50      | Equivalent to OECD 423 | > 2000 mg/kg bw |               | Rat (male / female) | Experimental value  |        |
| Skin              | LD50      | OECD 402               | > 2000 mg/kg bw |               | Rat (male / female) | Experimental value  |        |
| Inhalation (dust) | LC50      | OECD 403               | > 4.75 mg/l air | 4 h           | Rat (male / female) | Experimental value  |        |

#### Conclusion

Not classified for acute toxicity

#### Corrosion/irritation

##### SUPERSOLDER

No (test)data on the mixture available

Judgement is based on the relevant ingredients

lead massive: [particle diameter  $\geq 1\text{mm}$ ]

| Route of exposure | Result         | Method   | Exposure time | Time point          | Species | Value determination | Remark |
|-------------------|----------------|----------|---------------|---------------------|---------|---------------------|--------|
| Eye               | Not irritating | OECD 405 | 72 h          | 24; 48; 72 hours    | Rabbit  | Experimental value  |        |
| Skin              | Not irritating | OECD 404 | 4 h           | 1; 24; 48; 72 hours | Rabbit  | Experimental value  |        |

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| Route of exposure | Result         | Method   | Exposure time | Time point       | Species | Value determination | Remark |
|-------------------|----------------|----------|---------------|------------------|---------|---------------------|--------|
| Eye               | Not irritating | OECD 405 |               | 24; 48; 72 hours | Rabbit  | Experimental value  |        |
| Skin              | Not irritating | OECD 404 | 4 h           | 24; 72 hours     | Rabbit  | Experimental value  |        |

## Conclusion

Not classified as irritating to the skin  
Not classified as irritating to the eyes  
Not classified as irritating to the respiratory system

## Respiratory or skin sensitisation

### SUPERSOLDER

No (test)data on the mixture available  
Judgement is based on the relevant ingredients  
lead massive: [particle diameter  $\geq 1\mu\text{m}$ ]

| Route of exposure | Result          | Method   | Exposure time | Observation time point | Species                    | Value determination                   | Remark |
|-------------------|-----------------|----------|---------------|------------------------|----------------------------|---------------------------------------|--------|
| Skin              | Not sensitizing | OECD 406 |               | 24; 48 hours           | Guinea pig (male / female) | Experimental value of similar product |        |

## Conclusion

Not classified as sensitizing for skin  
Not classified as sensitizing for inhalation

## Specific target organ toxicity

### SUPERSOLDER

No (test)data on the mixture available  
Classification is based on the relevant ingredients  
lead massive: [particle diameter  $\geq 1\mu\text{m}$ ]

| Route of exposure    | Parameter  | Method | Value                     | Organ  | Effect                                      | Exposure time | Species | Value determination |
|----------------------|------------|--------|---------------------------|--------|---|---------------|---------|---------------------|
| Oral                 | NOEL       |        | 0.002 mg/kg bw/day        |        | No effect                                   | 12 month(s)   | Rat     | Experimental value  |
| Oral                 | LOEL       |        | 0.005 mg/kg bw/day        | Blood  | Change in the haemogramme/blood composition | 12 month(s)   | Rat     | Experimental value  |
| Dermal               | Dose level |        | 106 mg                    | Kidney | Affection of the renal tissue               | 24 h          | Rat     | Experimental value  |
| Inhalation (aerosol) | Dose level |        | 2.5 mg/m <sup>3</sup> air |        | Weakening of the immune system              | 4 week(s)     | Mouse   | Experimental value  |

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| Route of exposure | Parameter | Method   | Value               | Organ | Effect | Exposure time | Species             | Value determination |
|-------------------|-----------|----------|---------------------|-------|--------|---------------|---------------------|---------------------|
| Oral              | NOEL      | OECD 407 | > 1000 mg/kg bw/day |       |        | 28 day(s)     | Rat (male / female) | Experimental value  |

## Conclusion

May cause damage to organs (blood, central nervous system, kidneys) through prolonged or repeated exposure if swallowed and if inhaled.

## Mutagenicity (in vitro)

### SUPERSOLDER

No (test)data on the mixture available  
Judgement is based on the relevant ingredients  
lead massive: [particle diameter  $\geq 1\mu\text{m}$ ]

| Result   | Method                 | Test substrate           | Effect    | Value determination | Remark |
|----------|------------------------|--------------------------|-----------|---------------------|--------|
| Negative |                        | Human lymphocytes        | No effect | Experimental value  |        |
| Negative | Equivalent to OECD 471 | Bacteria (S.typhimurium) | No effect | Experimental value  |        |

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| Result   | Method   | Test substrate           | Effect | Value determination | Remark |
|----------|----------|--------------------------|--------|---------------------|--------|
| Negative | OECD 471 | Bacteria (S.typhimurium) |        | Experimental value  |        |

## Mutagenicity (in vivo)

### SUPERSOLDER

No (test)data on the mixture available  
Judgement is based on the relevant ingredients

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lead massive: [particle diameter ≥1mm]

| Result                         | Method            | Exposure time | Test substrate | Organ | Value determination                   |
|--------------------------------|-------------------|---------------|----------------|-------|---------------------------------------|
| Positive (Oral (stomach tube)) | Micronucleus test | 70 day(s)     | Rat (female)   | Blood | Experimental value of similar product |

## Conclusion

Not classified for mutagenic or genotoxic toxicity

## Carcinogenicity

### SUPERSOLDER

No (test)data on the mixture available

Judgement is based on the relevant ingredients

lead massive: [particle diameter ≥1mm]

| Route of exposure     | Parameter | Method                      | Value                   | Exposure time | Species    | Effect                 | Organ  | Value determination |
|-----------------------|-----------|-----------------------------|-------------------------|---------------|------------|------------------------|--------|---------------------|
| Inhalation            | NOEL      | Carcinogenic toxicity study | 5 mg/m <sup>3</sup> air | 1 year(s)     | Rat (male) | No carcinogenic effect | Lungs  | Experimental value  |
| Oral (drinking water) | LOAEL     | EPA OTS 798.3320            | ≥ 250 ppm               | 2 year(s)     | Rat (male) | Tumor formation        | Kidney | Experimental value  |

## Conclusion

Not classified for carcinogenicity

## Reproductive toxicity

### SUPERSOLDER

No (test)data on the mixture available

The chronic toxicity of the component(s) relates only to the substance in finely divided state and/or in molten state

Classification is based on the relevant ingredients

lead massive: [particle diameter ≥1mm]

|  | Parameter | Method                       | Value    | Exposure time | Species      | Effect   | Organ                             | Value determination |
|--|-----------|------------------------------|----------|---------------|--------------|--|-----------------------------------|---------------------|
| Developmental toxicity (Oral (drinking water)) | LOEL      | Developmental toxicity study | 0.05 %   | 85 day(s)     | Rat (female) | Fertility; reproductive performance; systemic toxicity | Reproductive organs               | Experimental value  |
| Effects on fertility (Oral (drinking water))   | NOAEL     |                              | 250 mg/l | 60 day(s)     | Rat (male)   | No effect  | sperm parameters or estrous cycle | Experimental value  |
| Effects on lactation                           |           |                              |          |               |              | May cause harm to breast-fed children.                 |                                   | Annex VI            |

tin

|  | Parameter | Method   | Value               | Exposure time | Species             | Effect    | Organ | Value determination |
|--|-----------|----------|---------------------|---------------|---------------------|-----------|-------|---------------------|
| Developmental toxicity (Oral (stomach tube)) | NOAEL     | OECD 414 | 1000 mg/kg bw/day   |               | Rat                 | No effect |       | Experimental value  |
| Effects on fertility (Oral (stomach tube))   | NOEL      | OECD 421 | > 1000 mg/kg bw/day | 54 day(s)     | Rat (male / female) |           |       | Experimental value  |

## Conclusion

May damage fertility.

May damage the unborn child.

May cause harm to breast-fed children.

## Aspiration hazard

Not classified for aspiration toxicity

## Toxicity other effects

### SUPERSOLDER

No (test)data on the mixture available

## Chronic effects from short and long-term exposure

### SUPERSOLDER

Change in the haemogramme/blood composition. Impairment of the nervous system. Affection of the renal tissue.

## 11.2. Information on other hazards

No evidence of endocrine disrupting properties

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## SECTION 12: Ecological information

### 12.1. Toxicity

#### SUPERSOLDER

No (test)data on the mixture available  
Judgement of the mixture is based on the relevant ingredients

#### Conclusion

Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

### 12.2. Persistence and degradability

#### Water

Biodegradability: not applicable

### 12.3. Bioaccumulative potential

#### SUPERSOLDER

#### Log Kow

| Method | Remark                   | Value | Temperature | Value determination |
|--------|--------------------------|-------|-------------|---------------------|
|        | Not applicable (mixture) |       |             |                     |

lead massive: [particle diameter  $\geq 1$ mm]

#### BCF other aquatic organisms

| Parameter | Method | Value                   | Duration | Species | Value determination |
|-----------|--------|-------------------------|----------|---------|---------------------|
| BCF       |        | 1553 l/kg; Fresh weight |          |         | Literature study    |

#### Log Kow

| Method | Remark                     | Value | Temperature | Value determination |
|--------|----------------------------|-------|-------------|---------------------|
|        | Not applicable (inorganic) |       |             |                     |

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#### Log Kow

| Method | Remark                     | Value | Temperature | Value determination |
|--------|----------------------------|-------|-------------|---------------------|
|        | Not applicable (inorganic) |       |             |                     |

#### Conclusion

No straightforward conclusion can be drawn based upon the available numerical values

### 12.4. Mobility in soil

Contains component(s) that adsorb(s) into the soil

### 12.5. Results of PBT and vPvB assessment

The criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006 do not apply to inorganic substances.

### 12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties

### 12.7. Other adverse effects

#### SUPERSOLDER

#### Greenhouse gases

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014)

#### Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

#### Groundwater

Groundwater pollutant

## SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 13.1. Waste treatment methods

#### 13.1.1 Provisions relating to waste

##### European Union

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

06 04 05\* (metal-containing wastes other than those mentioned in 06 03: wastes containing other heavy metals). Depending on branch of industry and production process, also other waste codes may be applicable.

#### 13.1.2 Disposal methods

# SUPERSOLDER

Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into drains or the environment. Dispose of at authorized waste collection point. Do not discharge into surface water (Directive 2000/60/EC, Council Decision 2455/2001/EC).

## 13.1.3 Packaging/Container

### European Union

Waste material code packaging (Directive 2008/98/EC).

15 01 10\* (packaging containing residues of or contaminated by dangerous substances).

## SECTION 14: Transport information

### Road (ADR), Rail (RID), Inland waterways (ADN), Sea (IMDG/IMSBC), Air (ICAO-TI/IATA-DGR)

#### 14.1. UN number/ID number

|           |             |
|-----------|-------------|
| Transport | Not subject |
|-----------|-------------|

#### 14.2. UN proper shipping name

#### 14.3. Transport hazard class(es)

|                              |  |
|------------------------------|--|
| Hazard identification number |  |
| Class                        |  |
| Classification code          |  |

#### 14.4. Packing group

|               |  |
|---------------|--|
| Packing group |  |
| Labels        |  |

#### 14.5. Environmental hazards

|  |    |
|--|----|
| Environmentally hazardous substance mark | no |
|--|----|

#### 14.6. Special precautions for user

|                    |  |
|--------------------|--|
| Special provisions |  |
| Limited quantities |  |

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

|                          |                |
|--------------------------|----------------|
| Annex II of MARPOL 73/78 | Not applicable |
|--------------------------|----------------|

## SECTION 15: Regulatory information

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

#### European legislation:

VOC content Directive 2010/75/EU

| VOC content | Remark                     |
|-------------|----------------------------|
|             | Not applicable (inorganic) |

Directive 2012/18/EU (Seveso III)

Not subject to registration according to Directive 2012/18/EU (Seveso III)

Prior informed consent (PIC)

Contains component(s) listed in Annex I of Regulation (EU) No 649/2012: Part 1 - List of chemicals subject to export notification procedure

European drinking water standards (98/83/EC and 2020/2184)

lead massive: [particle diameter ≥1mm]

| Parameter | Parametric value | Note | Reference  |
|-----------|------------------|------|--|
| Lead      | 5 µg/l           |      | Listed in Annex I, Part B, of Directive (EU) 2020/2184 on the quality of water intended for human consumption. |
| Lead      | 10 µg/l          |      | Listed in Annex I, Part D, of Directive (EU) 2020/2184 on the quality of water intended for human consumption. |

copper

| Parameter | Parametric value | Note | Reference  |
|-----------|------------------|------|--|
| Copper    | 2 mg/l           |      | Listed in Annex I, Part B, of Directive (EU) 2020/2184 on the quality of water intended for human consumption. |

REACH Candidate list

Contains component(s) included in candidate list of substances of very high concern (SVHC) for authorisation (Article 59 of Regulation (EC) No 1907/2006)

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

|  | Designation of the substance, of the group of substances or of the mixture   | Conditions of restriction   |
|--|--|---|
| · lead massive: [particle diameter ≥1mm] | Substances which are classified as reproductive toxicant category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 5 or Appendix 6, respectively. | Without prejudice to the other parts of this Annex the following shall apply to entries 28 to 30:<br>1. Shall not be placed on the market, or used,<br>— as substances,<br>— as constituents of other substances, or,<br>— in mixtures, |

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|   |                               |   |
|---|-------------------------------|---|
|   |                               | <p>for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than:</p> <ul style="list-style-type: none"> <li>— either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or,</li> <li>— the relevant generic concentration limit specified in Part 3 of Annex I of Regulation (EC) No 1272/2008.</li> </ul> <p>Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows: "Restricted to professional users".</p> <p>2. By way of derogation, paragraph 1 shall not apply to:</p> <ul style="list-style-type: none"> <li>(a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC;</li> <li>(b) cosmetic products as defined by Directive 76/768/EEC;</li> <li>(c) the following fuels and oil products:             <ul style="list-style-type: none"> <li>— motor fuels which are covered by Directive 98/70/EC,</li> <li>— mineral oil products intended for use as fuel in mobile or fixed combustion plants,</li> <li>— fuels sold in closed systems (e.g. liquid gas bottles);</li> </ul> </li> <li>(d) artists' paints covered by Regulation (EC) No 1272/2008;</li> <li>(e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date;</li> <li>(f) devices covered by Regulation (EU) 2017/745.</li> </ul>  |
| <p>· lead massive: [particle diameter ≥1mm]</p> | <p>Lead and its compounds</p> | <p>1. Shall not be placed on the market or used in any individual part of jewellery articles if the concentration of lead (expressed as metal) in such a part is equal to or greater than 0,05 % by weight.</p> <p>2. For the purposes of paragraph 1:</p> <ul style="list-style-type: none"> <li>(i) "jewellery articles" shall include jewellery and imitation jewellery articles and hair accessories, including:             <ul style="list-style-type: none"> <li>(a) bracelets, necklaces and rings;</li> <li>(b) piercing jewellery;</li> <li>(c) wrist watches and wrist-wear;</li> <li>(d) brooches and cufflinks;</li> </ul> </li> <li>(ii) "any individual part" shall include the materials from which the jewellery is made, as well as the individual components of the jewellery articles.</li> </ul> <p>3. Paragraph 1 shall also apply to individual parts when placed on the market or used for jewellery-making.</p> <p>4. By way of derogation, paragraph 1 shall not apply to:</p> <ul style="list-style-type: none"> <li>(a) crystal glass as defined in Annex I (categories 1, 2, 3 and 4) to Council Directive 69/493/EEC (*);</li> <li>(b) internal components of watch timepieces inaccessible to consumers;</li> <li>(c) non-synthetic or reconstructed precious and semiprecious stones (CN code 7103, as established by Regulation (EEC) No 2658/87), unless they have been treated with lead or its compounds or mixtures containing these substances;</li> <li>(d) enamels, defined as vitrifiable mixtures resulting from the fusion, vitrification or sintering of minerals melted at a temperature of at least 500 °C. (*) OJ L 326, 29.12.1969, p. 36.</li> </ul> <p>5. By way of derogation, paragraph 1 shall not apply to jewellery articles placed on the market for the first time before 9 October 2013 and jewellery articles produced before 10 December 1961.</p> <p>6. By 9 October 2017, the Commission shall re-evaluate paragraphs 1 to 5 of this entry in the light of new scientific information, including the availability of alternatives and the migration of lead from the articles referred to in paragraph 1 and, if appropriate, modify this entry accordingly.</p> <p>7. Shall not be placed on the market or used in articles supplied to the general public, if the concentration of lead (expressed as metal) in those articles or accessible parts thereof is equal to or greater than 0,05 % by weight, and those articles or accessible parts thereof may, during normal or reasonably foreseeable conditions of use, be placed in the mouth by children.</p> <p>That limit shall not apply where it can be demonstrated that the rate of lead release from such an article or any such accessible part of an article, whether coated or uncoated, does not exceed 0,05 µg/cm<sup>2</sup> per hour (equivalent to 0,05 µg/g/h), and, for coated articles, that the coating is sufficient to ensure that this release rate is not exceeded for a period of at least two years of normal or reasonably foreseeable conditions of use of the article.</p> <p>For the purposes of this paragraph, it is considered that an article or accessible part of an article may be placed in the mouth by children if it is smaller than 5 cm in one dimension or has a detachable or protruding part of that size.</p> <p>8. By way of derogation, paragraph 7 shall not apply to:</p> <ul style="list-style-type: none"> <li>(a) jewellery articles covered by paragraph 1;</li> <li>(b) crystal glass as defined in Annex I (categories 1, 2, 3 and 4) to Directive 69/493/EEC;</li> <li>(c) non-synthetic or reconstructed precious and semi-precious stones (CN code 7103 as established by Regulation (EEC) No 2658/87) unless they have been treated with lead or its compounds or mixtures containing these substances;</li> <li>(d) enamels, defined as vitrifiable mixtures resulting from the fusion, vitrification or sintering of mineral melted at a temperature of at least 500 °C;</li> <li>(e) keys and locks, including padlocks;</li> <li>(f) musical instruments;</li> <li>(g) articles and parts of articles comprising brass alloys, if the concentration of lead (expressed as metal) in the brass alloy does not exceed 0,5 % by weight;</li> <li>(h) the tips of writing instruments;</li> <li>(i) religious articles;</li> <li>(j) portable zinc-carbon batteries and button cell batteries;</li> <li>(k) articles within the scope of:             <ul style="list-style-type: none"> <li>(i) Directive 94/62/EC;</li> </ul> </li> </ul> |

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(ii) Regulation (EC) No 1935/2004;  
(iii) Directive 2009/48/EC of the European Parliament and of the Council (\*);  
(iv) Directive 2011/65/EU of the European Parliament and of the Council (\*\*)  
9. By 1 July 2019, the Commission shall re-evaluate paragraphs 7 and 8(e), (f), (i) and (j) of this entry in the light of new scientific information, including the availability of alternatives and the migration of lead from the articles referred to in paragraph 7, including the requirement on coating integrity, and, if appropriate, modify this entry accordingly.  
10. By way of derogation paragraph 7 shall not apply to articles placed on the market for the first time before 1 June 2016.  
(\* ) Directive 2009/48/EC of the European Parliament and of the Council of 18 June 2009 on the safety of toys (OJ L 170, 30.6.2009, p. 1).  
(\*\* ) Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (OJ L 174, 1.7.2011, p. 88).  
11. Doing either of the following acts after 15 February 2023 in or within 100 metres of wetlands is prohibited:  
(a) discharging gunshot containing a concentration of lead (expressed as metal) equal to or greater than 1 % by weight;  
(b) carrying any such gunshot where this occurs while out wetland shooting or as part of going wetland shooting.  
For the purposes of the first subparagraph:  
(a) "within 100 metres of wetlands" means within 100 metres outward from any outer boundary point of a wetland;  
(b) "wetland shooting" means shooting in or within 100 metres of wetlands;  
(c) if a person is found carrying gunshot in or within 100 metres of wetlands while out shooting or as part of going shooting, the shooting concerned shall be presumed to be wetland shooting unless that person can demonstrate that it was some other type of shooting.  
The restriction laid down in the first subparagraph shall not apply in a Member State if that Member State notifies the Commission in accordance with paragraph 12 that it intends to make use of the option granted by that paragraph.  
12. If at least 20 % in total of the territory, excluding the territorial waters, of a Member State are wetlands, that Member State may, in place of the restriction laid down in the first subparagraph of paragraph 11, prohibit the following acts throughout the whole of its territory from 15 February 2024:  
(a) the placing on the market of gunshot containing a concentration of lead (expressed as metal) equal to or greater than 1 % by weight;  
(b) the discharging of any such gunshot;  
(c) carrying any such gunshot while out shooting or as part of going shooting.  
Any Member State intending to make use of the option granted by the first subparagraph shall notify the Commission of this intention by 15 August 2021. The Member State shall communicate the text of the national measures adopted by it to the Commission without delay and in any event by 15 August 2023. The Commission shall make publicly available without delay any such notices of intention and texts of national measures received by it.  
13. For the purposes of paragraphs 11 and 12:  
(a) "wetlands" means areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres;  
(b) "gunshot" means pellets used or intended for use in a single charge or cartridge in a shotgun;  
(c) "shotgun" means a smooth-bore gun, excluding airguns;  
(d) "shooting" means any shooting with a shotgun;  
(e) "carrying" means any carrying on the person or carrying or transporting by any other means;  
(f) in determining whether a person found with gunshot is carrying gunshot "as part of going shooting":  
(i) regard shall be had to all the circumstances of the case;  
(ii) the person found with the gunshot need not necessarily be the same person as the person shooting.  
14. Member States may maintain national provisions for protection of the environment or human health in force on 15 February 2021 and restricting lead in gunshot more severely than provided for in paragraph 11.  
The Member State shall communicate the text of those national provisions to the Commission without delay. The Commission shall make publicly available without delay any such texts of national provisions received by it.  
15. Shall not be placed on the market or used in articles produced from polymers or copolymers of vinyl chloride ("PVC"), if the concentration of lead is equal to or greater than 0,1 % by weight of the PVC material.  
16. Paragraph 15 shall apply with effect from 29 November 2024.  
17. By way of derogation, paragraph 15 shall not apply to PVC articles containing recovered flexible PVC until 28 May 2025.  
18. By way of derogation, paragraph 15 shall not apply to the following PVC articles containing recovered rigid PVC until 28 May 2033, if the concentration of lead is lower than 1,5 % by weight of the recovered rigid PVC:  
(a) profiles and sheets for exterior applications in buildings and civil engineering works, excluding decks and terraces;  
(b) profiles and sheets for decks and terraces, provided that the recovered PVC is used in a middle layer and is entirely covered with a layer of PVC or other material for which the concentration of lead is lower than 0,1 % by weight;  
(c) profiles and sheets for use in concealed spaces or voids in buildings and civil engineering works (where they are inaccessible during normal use, excluding maintenance, for example, cable ducts);  
(d) profiles and sheets for interior building applications, provided that the entire surface of the profile or sheet facing the occupied areas of a building after installation is

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|---|--|---|
|   |  | <p>produced using PVC or other material for which the concentration of lead is lower than 0,1 % by weight;</p> <p>(e) multi-layer pipes (excluding pipes for drinking water), provided that the recovered PVC is used in a middle layer and is entirely covered with a layer of PVC or other material for which the concentration of lead is lower than 0,1 % by weight;</p> <p>(f) fittings, excluding fittings for pipes for drinking water.</p> <p>From 28 May 2026, rigid PVC recovered from the categories of articles referred to in points (a) to (d) shall only be used for the production of new articles of any of those categories. Suppliers of PVC articles containing recovered rigid PVC with a concentration of lead equal to or greater than 0,1 % by weight of the PVC material shall ensure, before placing those articles on the market, that they are visibly, legibly and indelibly marked with the statement: "Contains ≥ 0,1 % lead".</p> <p>Where the marking cannot be provided on the article due to the nature of the article, it shall be on the packaging of the article.</p> <p>Suppliers of PVC articles containing recovered rigid PVC shall submit to national enforcement authorities upon request documentary evidence to substantiate the claims on the recovered origin of the PVC in those articles. Certificates issued by schemes to provide proof of traceability and recycled content, such as those developed according to EN 15343:2007 or equivalent recognised standards, may be used to substantiate such claims for PVC articles produced in the Union. Claims made on the recovered origin of the PVC in imported articles shall be accompanied by a certificate that provides equivalent proof of traceability and recycled content, issued by an independent third party.</p> <p>By 28 May 2028, the Commission shall review this paragraph in light of new scientific information and, if appropriate, modify it accordingly.</p> <p>19. By way of derogation, paragraph 15 shall not apply to:</p> <p>(a) PVC-silica separators in lead acid batteries, until 28 May 2033;</p> <p>(b) articles covered by paragraph 1, in accordance with paragraphs 2 to 5, and by paragraph 7 in accordance with paragraphs 8 and 10;</p> <p>(c) articles within the scope of:</p> <p>(i) Regulation (EC) No 1935/2004;</p> <p>(ii) Directive 2011/65/EU;</p> <p>(iii) Directive 94/62/EC;</p> <p>(iv) Directive 2009/48/EC.</p> <p>20. By way of derogation, paragraph 15 shall not apply to PVC articles placed on the market until 28 November 2024.</p>   |
| <p>· lead massive: [particle diameter ≥1mm]</p> | <p>The substances listed in column 1 of the Table in Appendix 12</p> | <p>1. Shall not be placed on the market after 1 November 2020 in any of the following:</p> <p>(a) clothing or related accessories;</p> <p>(b) textiles other than clothing which, under normal or reasonably foreseeable conditions of use, come into contact with human skin to an extent similar to clothing;</p> <p>(c) footwear;</p> <p>if the clothing, related accessory, textile other than clothing or footwear is for use by consumers and the substance is present in a concentration, measured in homogeneous material, equal to or greater than that specified for that substance in Appendix 12.</p> <p>2. By way of derogation, in relation to the placing on the market of formaldehyde [CAS No 50-00-0] in jackets, coats or upholstery, the relevant concentration for the purposes of paragraph 1 shall be 300 mg/kg during the period between 1 November 2020 and 1 November 2023. The concentration specified in Appendix 12 shall apply thereafter.</p> <p>3. Paragraph 1 shall not apply to:</p> <p>(a) clothing, related accessories or footwear, or parts of clothing, related accessories or footwear, made exclusively of natural leather, fur or hide;</p> <p>(b) non-textile fasteners and non-textile decorative attachments;</p> <p>(c) second-hand clothing, related accessories, textiles other than clothing or footwear</p> <p>(d) wall-to-wall carpets and textile floor coverings for indoor use, rugs and runners.</p> <p>4. Paragraph 1 shall not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 of the European Parliament and of the Council (*) or Regulation (EU) 2017/745 of the European Parliament and of the Council (**).</p> <p>5. Paragraph 1(b) shall not apply to disposable textiles. 'Disposable textiles' means textiles that are designed to be used only once or for a limited time and are not intended for subsequent use for the same or a similar purpose.</p> <p>6. Paragraphs 1 and 2 shall apply without prejudice to the application of any stricter restrictions set out in this Annex or in other applicable Union legislation.</p> <p>7. The Commission shall review the exemption in paragraph 3(d) and, if appropriate, modify that point accordingly.</p> <p>(*) Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC (OJ L 81, 31.3.2016, p. 51).</p> <p>(**) Regulation (EU) 2017/745 of the European Parliament and of the Council of 5 April 2017 on medical devices, amending Directive 2001/83/EC, Regulation (EC) No 178/2002 and Regulation (EC) No 1223/2009 and repealing Council Directives 90/385/EEC and 93/42/EEC (OJ L 117, 5.5.2017, p. 1).</p> |
| <p>· lead massive: [particle diameter ≥1mm]</p> | <p>Lead and its compounds</p>  | <p>1. Shall not be placed on the market or used in any individual part of jewellery articles if the concentration of lead (expressed as metal) in such a part is equal to or greater than 0,05 % by weight.</p> <p>2. For the purposes of paragraph 1:</p> <p>(i) "jewellery articles" shall include jewellery and imitation jewellery articles and hair accessories, including:</p> <p>(a) bracelets, necklaces and rings;</p> <p>(b) piercing jewellery;</p> <p>(c) wrist watches and wrist-wear;</p> <p>(d) brooches and cufflinks;</p> <p>(ii) "any individual part" shall include the materials from which the jewellery is made, as well as the individual components of the jewellery articles.</p> <p>3. Paragraph 1 shall also apply to individual parts when placed on the market or used for</p>   |

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jewellery-making.

4. By way of derogation, paragraph 1 shall not apply to:

- (a) crystal glass as defined in Annex I (categories 1, 2, 3 and 4) to Council Directive 69/493/EEC (\*);
- (b) internal components of watch timepieces inaccessible to consumers;
- (c) non-synthetic or reconstructed precious and semiprecious stones (CN code 7103, as established by Regulation (EEC) No 2658/87), unless they have been treated with lead or its compounds or mixtures containing these substances;
- (d) enamels, defined as vitrifiable mixtures resulting from the fusion, vitrification or sintering of minerals melted at a temperature of at least 500 °C. (\* OJ L 326, 29.12.1969, p. 36.

5. By way of derogation, paragraph 1 shall not apply to jewellery articles placed on the market for the first time before 9 October 2013 and jewellery articles produced before 10 December 1961.

6. By 9 October 2017, the Commission shall re-evaluate paragraphs 1 to 5 of this entry in the light of new scientific information, including the availability of alternatives and the migration of lead from the articles referred to in paragraph 1 and, if appropriate, modify this entry accordingly.

7. Shall not be placed on the market or used in articles supplied to the general public, if the concentration of lead (expressed as metal) in those articles or accessible parts thereof is equal to or greater than 0,05 % by weight, and those articles or accessible parts thereof may, during normal or reasonably foreseeable conditions of use, be placed in the mouth by children.

That limit shall not apply where it can be demonstrated that the rate of lead release from such an article or any such accessible part of an article, whether coated or uncoated, does not exceed 0,05 µg/cm<sup>2</sup> per hour (equivalent to 0,05 µg/g/h), and, for coated articles, that the coating is sufficient to ensure that this release rate is not exceeded for a period of at least two years of normal or reasonably foreseeable conditions of use of the article.

For the purposes of this paragraph, it is considered that an article or accessible part of an article may be placed in the mouth by children if it is smaller than 5 cm in one dimension or has a detachable or protruding part of that size.

8. By way of derogation, paragraph 7 shall not apply to:

- (a) jewellery articles covered by paragraph 1;
- (b) crystal glass as defined in Annex I (categories 1, 2, 3 and 4) to Directive 69/493/EEC;
- (c) non-synthetic or reconstructed precious and semi-precious stones (CN code 7103 as established by Regulation (EEC) No 2658/87) unless they have been treated with lead or its compounds or mixtures containing these substances;
- (d) enamels, defined as vitrifiable mixtures resulting from the fusion, vitrification or sintering of mineral melted at a temperature of at least 500 °C;
- (e) keys and locks, including padlocks;
- (f) musical instruments;
- (g) articles and parts of articles comprising brass alloys, if the concentration of lead (expressed as metal) in the brass alloy does not exceed 0,5 % by weight;
- (h) the tips of writing instruments;
- (i) religious articles;
- (j) portable zinc-carbon batteries and button cell batteries;
- (k) articles within the scope of:
  - (i) Directive 94/62/EC;
  - (ii) Regulation (EC) No 1935/2004;
  - (iii) Directive 2009/48/EC of the European Parliament and of the Council (\*);
  - (iv) Directive 2011/65/EU of the European Parliament and of the Council (\*\*)

9. By 1 July 2019, the Commission shall re-evaluate paragraphs 7 and 8(e), (f), (i) and (j) of this entry in the light of new scientific information, including the availability of alternatives and the migration of lead from the articles referred to in paragraph 7, including the requirement on coating integrity, and, if appropriate, modify this entry accordingly.

10. By way of derogation paragraph 7 shall not apply to articles placed on the market for the first time before 1 June 2016.

(\* Directive 2009/48/EC of the European Parliament and of the Council of 18 June 2009 on the safety of toys (OJ L 170, 30.6.2009, p. 1).

(\*\*) Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (OJ L 174, 1.7.2011, p. 88).

11. Doing either of the following acts after 15 February 2023 in or within 100 metres of wetlands is prohibited:

- (a) discharging gunshot containing a concentration of lead (expressed as metal) equal to or greater than 1 % by weight;
- (b) carrying any such gunshot where this occurs while out wetland shooting or as part of going wetland shooting.

For the purposes of the first subparagraph:

- (a) "within 100 metres of wetlands" means within 100 metres outward from any outer boundary point of a wetland;
- (b) "wetland shooting" means shooting in or within 100 metres of wetlands;
- (c) if a person is found carrying gunshot in or within 100 metres of wetlands while out shooting or as part of going shooting, the shooting concerned shall be presumed to be wetland shooting unless that person can demonstrate that it was some other type of shooting.

The restriction laid down in the first subparagraph shall not apply in a Member State if that Member State notifies the Commission in accordance with paragraph 12 that it intends to make use of the option granted by that paragraph.

12. If at least 20 % in total of the territory, excluding the territorial waters, of a Member State are wetlands, that Member State may, in place of the restriction laid down in the first subparagraph of paragraph 11, prohibit the following acts throughout the whole of its territory from 15 February 2024:

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(a) the placing on the market of gunshot containing a concentration of lead (expressed as metal) equal to or greater than 1 % by weight;

(b) the discharging of any such gunshot;

(c) carrying any such gunshot while out shooting or as part of going shooting.

Any Member State intending to make use of the option granted by the first subparagraph shall notify the Commission of this intention by 15 August 2021. The Member State shall communicate the text of the national measures adopted by it to the Commission without delay and in any event by 15 August 2023. The Commission shall make publicly available without delay any such notices of intention and texts of national measures received by it.

13. For the purposes of paragraphs 11 and 12:

(a) "wetlands" means areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres;

(b) "gunshot" means pellets used or intended for use in a single charge or cartridge in a shotgun;

(c) "shotgun" means a smooth-bore gun, excluding airguns;

(d) "shooting" means any shooting with a shotgun;

(e) "carrying" means any carrying on the person or carrying or transporting by any other means;

(f) in determining whether a person found with gunshot is carrying gunshot "as part of going shooting":

(i) regard shall be had to all the circumstances of the case;

(ii) the person found with the gunshot need not necessarily be the same person as the person shooting.

14. Member States may maintain national provisions for protection of the environment or human health in force on 15 February 2021 and restricting lead in gunshot more severely than provided for in paragraph 11.

The Member State shall communicate the text of those national provisions to the Commission without delay. The Commission shall make publicly available without delay any such texts of national provisions received by it.

15. Shall not be placed on the market or used in articles produced from polymers or copolymers of vinyl chloride ('PVC'), if the concentration of lead is equal to or greater than 0,1 % by weight of the PVC material.

16. Paragraph 15 shall apply with effect from 29 November 2024.

17. By way of derogation, paragraph 15 shall not apply to PVC articles containing recovered flexible PVC until 28 May 2025.

18. By way of derogation, paragraph 15 shall not apply to the following PVC articles containing recovered rigid PVC until 28 May 2033, if the concentration of lead is lower than 1,5 % by weight of the recovered rigid PVC:

(a) profiles and sheets for exterior applications in buildings and civil engineering works, excluding decks and terraces;

(b) profiles and sheets for decks and terraces, provided that the recovered PVC is used in a middle layer and is entirely covered with a layer of PVC or other material for which the concentration of lead is lower than 0,1 % by weight;

(c) profiles and sheets for use in concealed spaces or voids in buildings and civil engineering works (where they are inaccessible during normal use, excluding maintenance, for example, cable ducts);

(d) profiles and sheets for interior building applications, provided that the entire surface of the profile or sheet facing the occupied areas of a building after installation is produced using PVC or other material for which the concentration of lead is lower than 0,1 % by weight;

(e) multi-layer pipes (excluding pipes for drinking water), provided that the recovered PVC is used in a middle layer and is entirely covered with a layer of PVC or other material for which the concentration of lead is lower than 0,1 % by weight;

(f) fittings, excluding fittings for pipes for drinking water.

From 28 May 2026, rigid PVC recovered from the categories of articles referred to in points (a) to (d) shall only be used for the production of new articles of any of those categories.

Suppliers of PVC articles containing recovered rigid PVC with a concentration of lead equal to or greater than 0,1 % by weight of the PVC material shall ensure, before placing those articles on the market, that they are visibly, legibly and indelibly marked with the statement: "Contains ≥ 0,1 % lead".

Where the marking cannot be provided on the article due to the nature of the article, it shall be on the packaging of the article.

Suppliers of PVC articles containing recovered rigid PVC shall submit to national enforcement authorities upon request documentary evidence to substantiate the claims on the recovered origin of the PVC in those articles. Certificates issued by schemes to provide proof of traceability and recycled content, such as those developed according to EN 15343:2007 or equivalent recognised standards, may be used to substantiate such claims for PVC articles produced in the Union. Claims made on the recovered origin of the PVC in imported articles shall be accompanied by a certificate that provides equivalent proof of traceability and recycled content, issued by an independent third party.

By 28 May 2028, the Commission shall review this paragraph in light of new scientific information and, if appropriate, modify it accordingly.

19. By way of derogation, paragraph 15 shall not apply to:

(a) PVC-silica separators in lead acid batteries, until 28 May 2033;

(b) articles covered by paragraph 1, in accordance with paragraphs 2 to 5, and by paragraph 7 in accordance with paragraphs 8 and 10;

(c) articles within the scope of:

(i) Regulation (EC) No 1935/2004;

(ii) Directive 2011/65/EU;

(iii) Directive 94/62/EC;

(iv) Directive 2009/48/EC.

20. By way of derogation, paragraph 15 shall not apply to PVC articles placed on the market until 28 November 2024.



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|   |  |   |
|---|--|---|
| <p>· tin</p>                                    | <p>Substances falling within one or more of the following points:<br/>                 (a) substances classified as any of the following in Part 3 of Annex VI to Regulation (EC) No 1272/2008:<br/>                 — carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, but excluding any such substances classified due to effects only following exposure by inhalation<br/>                 — reproductive toxicant category 1A, 1B or 2 but excluding any such substances classified due to effects only following exposure by inhalation<br/>                 — skin sensitiser category 1, 1A or 1B<br/>                 — skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2<br/>                 — serious eye damage category 1 or eye irritant category 2<br/>                 (b) substances listed in Annex II to Regulation (EC) No 1223/2009 of the European Parliament and of the Council<br/>                 (c) substances listed in Annex IV to Regulation (EC) No 1223/2009 for which a condition is specified in at least one of the columns g, h and i of the table in that Annex (d) substances listed in Appendix 13 to this Annex.<br/>                 The ancillary requirements in paragraphs 7 and 8 of column 2 of this entry apply to all mixtures for use for tattooing purposes, whether or not they contain a substance falling within points (a) to (d) of this column of this entry.</p> | <p>Mixtures for tattooing purposes are subject to the restrictions of Regulation (EU) 2020/2081</p> |
| <p>· lead massive: [particle diameter ≥1mm]</p> | <p>Substances falling within one or more of the following points:<br/>                 (a) substances classified as any of the following in Part 3 of Annex VI to Regulation (EC) No 1272/2008:<br/>                 — carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, but excluding any such substances classified due to effects only following exposure by inhalation<br/>                 — reproductive toxicant category 1A, 1B or 2 but excluding any such substances classified due to effects only following exposure by inhalation<br/>                 — skin sensitiser category 1, 1A or 1B<br/>                 — skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2<br/>                 — serious eye damage category 1 or eye irritant category 2<br/>                 (b) substances listed in Annex II to Regulation (EC) No 1223/2009 of the European Parliament and of the Council<br/>                 (c) substances listed in Annex IV to Regulation (EC) No 1223/2009 for which a condition is specified in at least one of the columns g, h and i of the table in that Annex (d) substances listed in Appendix 13 to this Annex.<br/>                 The ancillary requirements in paragraphs 7 and 8 of column 2 of this entry apply to all mixtures for use for tattooing purposes, whether or not they contain a substance falling within points (a) to (d) of this column of this entry.</p> | <p>Mixtures for tattooing purposes are subject to the restrictions of Regulation (EU) 2020/2081</p> |

**National legislation Belgium**

**SUPERSOLDER**

|   |   |
|---|---|
| <p>Agents cancérigènes, mutagènes et reprotoxiques (Code du bien-être au travail, Livre VI, titre 2)</p>  | <p>reprotoxique catégorie 1A ou 1B selon CLP, n.s.a.</p>  |
| <p>lead massive: [particle diameter ≥1mm]<br/>Agents cancérigènes, mutagènes et reprotoxiques (Code du bien-être au travail, Livre VI, titre 2)</p> | <p>Plomb et ses composés inorganiques; VI.2.3.; Liste non limitative de substances, mélanges et procédés visés à l'article VI.2-1, alinéa 3</p> |

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|                 |  |
|-----------------|--|
| Résorption peau | Etain (métal); D; La mention "D" signifie que la résorption de l'agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l'exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l'agent dans l'air. |
|-----------------|--|

## National legislation The Netherlands

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|  |   |
|--|---|
| Waterbezwaarlijkheid   | Z (1); Algemene Beoordelingsmethodiek (ABM)   |
| lead massive: [particle diameter $\geq 1\text{mm}$ ]                   |   |
| SZW - Lijst van voor de voortplanting giftige stoffen (ontwikkeling)   | Lood, metallisch; Opgenomen in SZW-lijst van voor de voortplanting giftige stoffen (ontwikkeling); 1A   |
| SZW - Lijst van voor de voortplanting giftige stoffen (vruchtbaarheid) | Lood, metallisch; Opgenomen in SZW-lijst van voor de voortplanting giftige stoffen (vruchtbaarheid); 1A |
| SZW - Lijst van voor de voortplanting giftige stoffen (borstvoeding)   | Lood, metallisch; Opgenomen in SZW-lijst van voor de voortplanting giftige stoffen (borstvoeding)       |

## National legislation France

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No data available

lead massive: [particle diameter  $\geq 1\text{mm}$ ]

|  |                                     |
|--|-------------------------------------|
| Catégorie cancérogène                  | Plomb métallique et composés, en Pb |
| Catégorie toxique pour la reproduction | Plomb métallique et composés, en Pb |

## National legislation Germany

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|  |  |
|--|--|
| Lagerklasse (TRGS510)                                | 6.1 D: Nichtbrennbare, akut toxische Kat. 3 / giftige oder chronisch wirkende Gefahrstoffe   |
| WGK  | 1; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017 |
| lead massive: [particle diameter $\geq 1\text{mm}$ ] |  |
| TA-Luft  | 5.2.2/II   |

tin

|         |       |
|---------|-------|
| TA-Luft | 5.2.1 |
|---------|-------|

## National legislation Austria

### SUPERSOLDER

No data available

lead massive: [particle diameter  $\geq 1\text{mm}$ ]

|   |  |
|---|--|
| Fortpflanzungsgefährdend [fruchtschädigend (entwicklungsschädigend)]                    | Blei und seine Verbindungen außer Bleiarsenat, Bleichromat, Bleichromatoxid und Alkylbleiverbindungen; D |
| Fortpflanzungsgefährdend [Beeinträchtigung der Fortpflanzungsfähigkeit (Fruchtbarkeit)] | Blei und seine Verbindungen außer Bleiarsenat, Bleichromat, Bleichromatoxid und Alkylbleiverbindungen; F |
| Kann Säuglinge über die Muttermilch schädigen   | Blei und seine Verbindungen außer Bleiarsenat, Bleichromat, Bleichromatoxid und Alkylbleiverbindungen; L |

## National legislation United Kingdom

### SUPERSOLDER

No data available

## Other relevant data

### SUPERSOLDER

No data available

lead massive: [particle diameter  $\geq 1\text{mm}$ ]

|                       |   |
|-----------------------|---|
| IARC - classification | 2B; Lead and lead compounds             |
| TLV - Carcinogen      | Lead and inorganic compounds, as Pb; A3 |

## 15.2. Chemical safety assessment

No chemical safety assessment is required for a mixture.

## SECTION 16: Other information

### Full text of any H- and EUH-statements referred to under section 3:

- H360FD May damage fertility. May damage the unborn child.
- H362 May cause harm to breast-fed children.
- H372 Causes damage to organs (blood, central nervous system, kidneys) through prolonged or repeated exposure.
- H373 May cause damage to organs (blood, central nervous system, kidneys) through prolonged or repeated exposure if swallowed.
- H373 May cause damage to organs (blood, central nervous system, kidneys) through prolonged or repeated exposure if inhaled.

(\*) INTERNAL CLASSIFICATION BY BIG  
ADI Acceptable daily intake

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|              |   |
|--------------|---|
| AOEL         | Acceptable operator exposure level  |
| ATE          | Acute Toxicity Estimate   |
| BCF          | Bioconcentration Factor   |
| BEI          | Biological Exposure Indices   |
| CLP (EU-GHS) | Classification, labelling and packaging (Globally Harmonised System in Europe)    |
| DMEL         | Derived Minimal Effect Level  |
| DNEL         | Derived No Effect Level   |
| EC10         | Effect Concentration 10 %   |
| EC50         | Effect Concentration 50 %   |
| ErC50        | EC50 in terms of reduction of growth rate   |
| GLP          | Good Laboratory Practice  |
| LC0          | Lethal Concentration 0 %  |
| LC50         | Lethal Concentration 50 %   |
| LD50         | Lethal Dose 50 %  |
| LOAEC/LOAEL  | Lowest Observed Adverse Effect Concentration/Lowest Observed Adverse Effect Level |
| NOAEC/NOAEL  | No Observed Adverse Effect Concentration/No Observed Adverse Effect Level         |
| NOEC/NOEL    | No Observed Effect Concentration/No Observed Effect Level                         |
| OECD         | Organisation for Economic Co-operation and Development                            |
| PBT          | Persistent, Bioaccumulative & Toxic   |
| PNEC         | Predicted No Effect Concentration   |
| STP          | Sludge Treatment Process  |
| vPvB         | very Persistent & very Bioaccumulative  |

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.

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