



# Bismuth, Cadmium, Tin, Lead alloy (10-30% cadmium)

## Safety Data Sheet

according to Regulation (EU) 2015/830

Date of issue: 2016-10-19 Revision date: 2018-04-27 Supersedes: 2017-09-12 Version: 3.0

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

#### 1.1. Product identifier

Product form : Mixture  
Product name : Bismuth, Cadmium, Tin, Lead alloy (10-30% cadmium)  
Type of product : Alloy  
Synonyms : MCP 70; MCP 73; MCP 75; Metspec 158; Metspec 158/165

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

##### 1.2.1. Relevant identified uses

Use of the substance/mixture : Industrial uses: Uses of substances as such or in preparations\* at industrial sites  
Base metals and alloys  
Metal articles

##### 1.2.2. Uses advised against

No additional information available

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

##### Supplier

5N Plus Lübeck GmbH  
Kaninchenborn 24-28  
23560 Lübeck - Germany  
T 49451530040  
[MSDS@5nplus.com](mailto:MSDS@5nplus.com)

##### Supplier

5N Plus Shangyu Co. Ltd  
No.19 Weiyi East Road  
Hangzhou Bay Shangyu Industrial Zone  
Shangyu - China  
T 8657582706000  
[MSDS@5nplus.com](mailto:MSDS@5nplus.com)

##### Supplier

5N Plus Trumbull Inc.  
120 Corporate Drive  
06611 Trumbull - United States  
T 1 (203) 384-0331 - F (203) 368-4082  
[MSDS@5nplus.com](mailto:MSDS@5nplus.com)

#### 1.4. Emergency telephone number

Emergency number : ChemTel Contract Number MIS5311335  
USA and Canada: +1-800-255-3924 (toll free), Australia: +1-300-954-583, Brazil: +0-800-591-6042, China: +400-120-0751, India: +000-800-100-4086, Mexico: +01800-099-0731,  
International phone number : +1-813-248-0585 (collect calls accepted)

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0344 892 0111	

### SECTION 2: Hazards identification

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

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (inhalation:dust,mist) H330  
Category 2  
Germ cell mutagenicity, Category 2 H341  
Carcinogenicity, Category 1B H350  
Reproductive toxicity, Category 1A H360  
Reproductive toxicity, Additional category, Effects on or via lactation H362  
Specific target organ toxicity — Repeated exposure, Category 1 H372  
Hazardous to the aquatic environment — Acute Hazard, Category 1 H400  
Hazardous to the aquatic environment — Chronic Hazard, Category 1 H410

Full text of H statements : see section 16

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

May cause cancer. Suspected of causing genetic defects. May cause harm to breast-fed children. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. Fatal if inhaled. Very toxic to aquatic life with long lasting effects.

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### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

Hazardous ingredients :

Cadmium; Lead

Hazard statements (CLP) :

H330 - Fatal if inhaled.  
H341 - Suspected of causing genetic defects.  
H350 - May cause cancer.  
H360 - May damage fertility or the unborn child.  
H362 - May cause harm to breast-fed children.  
H372 - Causes damage to organs through prolonged or repeated exposure.  
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (CLP) :

P201 - Obtain special instructions before use.  
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.  
P263 - Avoid contact during pregnancy and while nursing.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P304+P340+P310 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician  
P308+P313 - IF exposed or concerned: Get medical advice/attention.

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Bismuth	(CAS-No.) 7440-69-9 (EC-No.) 231-177-4 (REACH-no) 01-2119560575-33-0000	30 - 60	Not classified
Cadmium substance listed as REACH Candidate	(CAS-No.) 7440-43-9 (EC-No.) 231-152-8 (EC Index-No.) 048-002-00-0 (REACH-no) 01-2119489023-40-0025	10 - 30	Acute Tox. 2 (Inhalation:dust,mist), H330 Muta. 2, H341 Carc. 1B, H350 Repr. 2, H361f STOT RE 1, H372 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410
Tin	(CAS-No.) 7440-31-5 (EC-No.) 231-141-8 (REACH-no) 01-2119486474-28-0058	10 - 30	Not classified
Lead	(CAS-No.) 7439-92-1 (EC-No.) 231-100-4 (EC Index-No.) 082-013-00-1, 082-014-00-7 (REACH-no) 01-2119513221-59-0103	10 - 30	Lact., H362 Repr. 1A, H360FD STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general :

Call a physician immediately.

First-aid measures after inhalation :

Remove person to fresh air and keep comfortable for breathing. Call a physician immediately.  
Call a doctor.

First-aid measures after skin contact :

Wash skin with plenty of water.

First-aid measures after eye contact :

Rinse eyes with water as a precaution.

First-aid measures after ingestion :

Call a poison center or a doctor if you feel unwell.

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

No additional information available

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Dry powder. Foam. Water spray.

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

Hazardous decomposition products in case of fire : Toxic fumes may be released.

### 5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe dust/fume/gas/mist/vapours/spray.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

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

For containment : Collect spillage.

Methods for cleaning up : Mechanically recover the product. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Wear personal protective equipment. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Avoid contact during pregnancy/while nursing. Do not breathe dust/fume/gas/mist/vapours/spray.

Hygiene measures : Separate working clothes from town clothes. Launder separately. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

Storage conditions : Store locked up. Store in a well-ventilated place. Keep container tightly closed.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Cadmium (7440-43-9)		
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	0,025 mg/m <sup>3</sup>
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	0,075 mg/m <sup>3</sup> (calculated)

### 8.2. Exposure controls

#### Appropriate engineering controls:

Ensure good ventilation of the work station.

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### Hand protection:

Protective gloves

### Eye protection:

Safety glasses

### Skin and body protection:

Wear suitable protective clothing

### Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

### Environmental exposure controls:

Avoid release to the environment.

## SECTION 9: Physical and chemical properties

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

Physical state	: Solid
Appearance	: metallic solid.
Colour	: No data available
Odour	: No data available
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: Not applicable
Solubility	: Insoluble.
Log Pow	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosive properties	: Not classified.
Oxidising properties	: Not classified.
Explosive limits	: Not applicable

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

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

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

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

### 10.5. Incompatible materials

Oxidizing agent. Strong acids.

### 10.6. Hazardous decomposition products

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

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### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Inhalation:dust,mist: Fatal if inhaled.

ATE CLP (dust,mist)	0,167 mg/l/4h
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#### Bismuth (7440-69-9)

LD50 oral rat	5 g/kg
LD50 oral	5000 mg/kg

#### Cadmium (7440-43-9)

LC50 inhalation rat (mg/l)	4,6 - 8,4 mg/m <sup>3</sup> (3 h)
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#### Tin (7440-31-5)

LD50 oral rat	> 2000 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 4,75 mg/l/4h

#### Lead (7439-92-1)

LD50 oral rat	> 2000 mg/kg Read-across from Lead oxide
LD50 dermal rat	> 200 mg/kg
LC50 inhalation rat (mg/l)	> 5,05 mg/l/4h

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Suspected of causing genetic defects.
Carcinogenicity	: May cause cancer.
Reproductive toxicity	: May damage fertility or the unborn child. May cause harm to breast-fed children.
STOT-single exposure	: Not classified
STOT-repeated exposure	: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general	: Very toxic to aquatic life with long lasting effects.
Acute aquatic toxicity	: Very toxic to aquatic life.
Chronic aquatic toxicity	: Very toxic to aquatic life with long lasting effects.

#### Cadmium (7440-43-9)

LC50 fish 1	0,003 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
LC50 fish 2	0,006 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 1	0,0244 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

#### Tin (7440-31-5)

LC50 fish 1	> 12,4 Pimephales promelas
EC50 72h algae (1)	> 19,2 mg/l pseudokirchnerella subcapitata

#### Lead (7439-92-1)

LC50 fish 1	107 µg/l Oncorhynchus mykiss (pH>6.5-8.5)
LC50 fish 2	194,2 µg/l Pimephales promelas (pH>5.5-8.5)
EC50 Daphnia 1	107,5 µg/l 48h EC50 (pH>7.5-8.5)
EC50 Daphnia 2	73,6 µg/l Ceriodaphnia dubia 48h EC50 (pH>5.5-8.5)
EC50 72h algae (1)	52 µg/L Pseudokirchneriella subcapitata (pH>6.5-7.5)
EC50 72h algae (2)	233,1 µg/L Pseudokirchneriella subcapitata (pH<7.5-8.5)
NOEC (chronic)	9,2 µg/L Mytilus trossolus (48h, developmental abnormalities, dissolved lead, Marine water)
NOEC chronic crustacea	8,2 Hyalella azteca (42d, mortality, dissolved lead, Freshwater)

#### 12.2. Persistence and degradability

No additional information available

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### 12.3. Bioaccumulative potential

No additional information available

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

Component	
Cadmium (7440-43-9)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
<b>14.2. UN proper shipping name</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
<b>14.3. Transport hazard class(es)</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
<b>14.4. Packing group</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
<b>14.5. Environmental hazards</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

### 14.6. Special precautions for user

#### - Overland transport

Not regulated

#### - Transport by sea

Not regulated

#### - Air transport

Not regulated

#### - Inland waterway transport

Not regulated

#### - Rail transport

Not regulated

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

23. Cadmium	Cadmium
28. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as Carcinogen category 1A or 1B (Table 3.1) or Carcinogen category 1 or 2 (Table 3.2) and listed as follows: Carcinogen category 1A (Table 3.1)/Carcinogen category 1 (Table 3.2) listed in Appendix 1 Carcinogen category 1B (Table 3.1)/Carcinogen category 2 (Table 3.2) listed in Appendix 2	Cadmium
63. Lead and its compounds	Lead

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Contains a substance on the REACH candidate list in concentration  $\geq 0.1\%$  or with a lower specific limit: Cadmium (EC 231-152-8, CAS 7440-43-9)

Contains no REACH Annex XIV substances

Directive 2012/18/EU (SEVESO III) : E1 Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1  
H2 ACUTE TOXIC  
— Category 2, all exposure routes  
— Category 3, inhalation exposure route

### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

**For the following substances of this mixture a chemical safety assessment has been carried out**

Cadmium  
Tin  
Lead

## SECTION 16: Other information

Indication of changes:

Section	Changed item	Change	Comments
3.2	REACH registration numbers	Added	
7.1	Precautions for safe handling	Modified	
15.1	REACH Annex XVII	Added	

Full text of H- and EUH-statements:

Acute Tox. 2 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 2
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Carc. 1B	Carcinogenicity, Category 1B
Lact.	Reproductive toxicity, Additional category, Effects on or via lactation
Muta. 2	Germ cell mutagenicity, Category 2
Repr. 1A	Reproductive toxicity, Category 1A
Repr. 2	Reproductive toxicity, Category 2
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
H330	Fatal if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H360FD	May damage fertility. May damage the unborn child.
H361f	Suspected of damaging fertility.
H362	May cause harm to breast-fed children.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

SDS EU (REACH Annex II)

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