

# SAFETY DATA SHEET

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

### 1.1. Product identifier

**Trade name**

Copper telluride, Harjavalta

**Product no.**

-

**REACH registration number**

01-2120121961-62-XXXX (UVCB)

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

**Relevant identified uses of the substance or mixture**

Raw material for metal production.

**Uses advised against**

-

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

**Company and address**Boliden Harjavalta  
PL 60  
28101 Pori

Puh 02 5358111

Fax 02 5358181

**Contact person****E-mail**[info.harjavalta@boliden.com](mailto:info.harjavalta@boliden.com)**SDS date**

14-09-2017

**SDS Version**

1.0

### 1.4. Emergency telephone number

999 (or 111 for non-emergency medical advice). Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department or the NHS enquiry service). See section 16.

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Skin Sens. 1B; H317

Carc. 1A; H350

Repr. 1B; H360

Aquatic Chronic 2; H411

See full text of H-phrases in section 2.2.

### 2.2. Label elements

**Hazard pictogram(s)****Signal word**

According to EC-Regulation 2015/830

Danger

**Hazard statement(s)**

May cause an allergic skin reaction. (H317)  
May cause cancer. (H350)  
May damage fertility or the unborn child. (H360)  
Toxic to aquatic life with long lasting effects. (H411)

**Safety statement(s)**

General

Prevention

-  
Avoid breathing dust. (P261).  
Wash hands/exposed areas/exposed skin/hands and exposed skin thoroughly after handling. (P264).  
Do not eat, drink or smoke when using this product. (P270).  
Avoid release to the environment. (P273).

Response

Collect spillage. (P391).  
IF SWALLOWED: Immediately call a POISON CENTER/doctor. (P301+P310).

Storage

Disposal

-  
Dispose of contents/container to an approved waste disposal plant. (P501).

**Identity of the substances primarily responsible for the major health hazards**

Copper telluride is a UVCB substance, including: Tellurium, Silver, Arsenic, Selenium and Copper.

**2.3. Other hazards**

Not applicable

**Additional labelling**

Not applicable

**Additional warnings**

Not applicable

**VOC**

Not applicable

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

NAME:	copper telluride
IDENTIFICATION NOS.:	CAS-no: 12019-52-2 EC-no: 234-646-1
CONTENT:	100%
CLP CLASSIFICATION:	Skin Sens. 1B, Carc. 1A, Repr. 1B, Aquatic Chronic 2 H317, H350, H360, H411

### 3.2. Mixtures

-

(\*) See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

### Other information

Copper telluride is a UVCB substance, including (name (EC/CAS), concentration):

Various copper tellurides as Cu<sub>2</sub>Te, rickardite, teineite and others, 65-75%

Copper metal (231-159-6/7440-50-8), 0-30%

Copper compounds, cuprit, posnjakite, atacamite, 0-20%

Tellurium metal (236-813-4/13494-80-9), 0-40%

Silver compounds; metal, Ag<sub>2</sub>Te, others, 0-<10%

Selenium and selenium compounds, CuSe, CuTeSe, 0-2,5%

Arsenic mainly in rooseveltite (BiAsO<sub>4</sub>), 0-1%

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet.

Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

#### Inhalation

According to EC-Regulation 2015/830

Bring the person into fresh air and stay with him.

#### **Skin contact**

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with soap and water. Contact a doctor if the complaints persist.

#### **Eye contact**

Remove contact lenses. Flush eyes immediately with plenty of water or isotonic water (20-30°C) for at least 15 minutes and continue until irritation stops. If irritation continues, contact a doctor.

#### **Ingestion**

In the case of ingestion, contact a doctor immediately and bring the safety data sheet or label. If the person is conscious, give them water. DO NOT try to induce vomiting. Hold head facing down to prevent vomit returning to the mouth and throat. Prevent shock by keeping the injured person warm and calm. Initiate immediate resuscitation if breathing stops. If unconscious, roll the injured person into recovery position. Call an ambulance.

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

#### **ACUTE:**

##### **Inhalation:**

Exposure to silver may lead to discoloration of tissues, so called argyria.

Inhalation of copper dust leads to irritation of the respiratory system and "metal fume fever".

##### **Ingestion:**

Ingestion of tellurium can cause drowsiness, nausea, loss of appetite and garlic-smelling breath.

Ingestion of copper can cause vomiting and diarrhea.

Exposure to silver may lead to discoloration of tissues, so called argyria.

#### **DELAYED:**

##### **Inhalation:**

Prolonged inhalation of copper dust may give fibrosis of the lungs.

##### **Ingestion:**

Ingestion of copper compounds may cause a pronounced gastrointestinal irritation, effect on the central nervous system, liver and kidney damages, hemolysis and methemoglobinemia.

##### **Skin contact:**

Solutions and dust of copper compounds may cause eczema or irritation of the skin. Hair may become discoloured.

Sensitisation: This product contains substances, which may trigger allergic reaction upon dermal contact.

Manifestation of allergic reactions typically takes place within 12-72 hours after exposure.

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

IF exposed or concerned: Get immediate medical advice/attention.

#### **Information to medics**

Bring this safety data sheet.

## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Waterjets should not be used, since they can spread the fire.

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

Elementary tellurium burns slowly in the presence of air, giving a green-blue flame.

Dust may form explosive mixtures with air.

### **5.3. Advice for firefighters**

Wear positive pressure self-contained breathing apparatus.

Wear chemical protective clothing.

## **SECTION 6: Accidental release measures**

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

Avoid direct contact with spilled substances.

Use personal protective equipment.

### **6.2. Environmental precautions**

According to EC-Regulation 2015/830

Avoid discharge to lakes, streams, sewers, etc. In the event of leakage to the surroundings, contact local environmental authorities.

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

Minor spills are collected with a cloth. Collection and disposal of the material shall be done with minimum creation of dust. Sweep and collect. Shall be contained in suitable and tightly closed disposal containers. To the extent possible cleaning is performed with normal cleaning agents. Avoid use of solvents.

### 6.4. Reference to other sections

See section 13 on "Disposal considerations" in regard of handling of waste. See section 8 on 'Exposure controls/personal protection' for protective measures.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Transport in a sack with an inner plastic sack. Do not smoke while handling the material. Prevent dust generation. Use local exhaust ventilation – control of dust – and ventilate closed areas before use. Use protective equipment if the control is not sufficient or as an extra precaution.

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

Store the container properly closed in a dry, cool and well ventilated area. Do not store with oxidizers.

#### Storage temperature

No data available.

### 7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### OEL

Tellurium & compounds, except hydrogen telluride, (as Te)  
Long-term exposure limit (8-hour TWA reference period): - ppm | 0,1 mg/m<sup>3</sup>

Copper  
Long-term exposure limit (8-hour TWA reference period): - ppm | 0,2/1 mg/m<sup>3</sup>  
Short-term exposure limit (15-minute reference period): - ppm | -/2 mg/m<sup>3</sup>  
Comments: Fume/dust

Selenium and compounds, except hydrogen selenide (as Se)  
Long-term exposure limit (8-hour TWA reference period): - ppm | 0,1 mg/m<sup>3</sup>

Silver, soluble compounds (as Ag) CAS 7440-22-4  
Limit value - Eight hours 0,01 mg/m<sup>3</sup>

Silver, metallic CAS 7440-22-4  
Limit value - Eight hours 0,1 mg/m<sup>3</sup>

Arsenic & compounds, except arsine (as As) as total dust  
Long-term exposure limit (8-hour TWA reference period): - ppm | 0,1 mg/m<sup>3</sup>

#### DNEL / PNEC

No data available

### 8.2. Exposure controls

Compliance with the accepted occupational exposure limits values should be controlled on a regular basis.

#### General recommendations

Observe general occupational hygiene standards.

#### Exposure scenarios

In the event exposure scenarios are appended to the safety data sheet, the operational conditions and risk management measures in these shall be complied with.

#### Exposure limits

Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values, section 8.1.

#### Appropriate technical measures

Exhaust air that contains the substances shall not be recirculated. Airborne gas and dust concentrations must be kept at a minimum and below current limit values. Installation of an exhaust system if normal air

According to EC-Regulation 2015/830

flow in the work room is not sufficient is recommended. Ensure emergency eyewash and -showers are clearly marked.

### Hygiene measures

In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Always wash hands, forearms and face.

### Measures to avoid environmental exposure

Keep containment materials near the workplace. If possible, collect spillage during work.

Tellur in melted form are toxic by inhalation and if swallowed.

Silver powder is toxic by inhalation.

Copper powder is harmful by inhalation and assessed as very toxic to fish and other aquatic organisms and may cause long-term adverse effects in the aquatic environment.

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



### Generally

Use only CE marked protective equipment.

### Respiratory Equipment

If ventilation at the work place is insufficient, use a half- or full mask with an appropriate filter or an air-supplied breathing apparatus depending on the specific work situation and how long you will be using the product.

### Skin protection

Dedicated work clothing should be worn. Wear a protective suit in the event of prolonged periods of work with the product.

### Hand protection

Wear protective gloves. Use dust- and moisture-proof gloves of neoprene or natural rubber.

### Eye protection

Wear safety glasses when exposed for dust.

## SECTION 9: Physical and chemical properties

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

Form	Solid
Colour	Black
Odour	None
Odour threshold (ppm)	No data available.
pH	No data available.
Viscosity (40°C)	No data available.
Density (g/cm <sup>3</sup> )	7,27

### Phase changes

Melting point (°C)	870
Boiling point (°C)	No data available.
Vapour pressure	No data available.
Decomposition temperature (°C)	No data available.
Evaporation rate (n-butylacetate = 100)	No data available.

### Data on fire and explosion hazards

Flash point (°C)	No data available.
Ignition (°C)	No data available.
Auto flammability (°C)	No data available.
Explosion limits (% v/v)	No data available.
Explosive properties	No data available.

### Solubility

Solubility in water	Insoluble
n-octanol/water coefficient	No data available.

### 9.2. Other information

Contains 3-40% moisture.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reacts with strong oxidizers, zinc, cadmium, fluorine, chlorine, chlorine trifluoride, chlorine pentafluoride and lithium silicide.

Reacts violently with sodium or silver bromate.

### 10.2. Chemical stability

The product is stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Avoid contact with strong oxidizers. Incandescence occurs when combined with zinc, cadmium, fluorine, chlorine, chlorine trifluoride, chlorine pentafluoride and lithium silicide. Reacts violently with sodium or silver bromate.

### 10.4. Conditions to avoid

See section 10.3.

### 10.5. Incompatible materials

See section 10.3.

### 10.6. Hazardous decomposition products

Melted tellurium oxidizes in air into toxic tellurium oxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity

Substance	Species	Test	Route of exposure	Result
Tellurium	Rat	LD50	Oral	>5000 mg/kg bw
Tellurium	Rat	LC50	Inhalation, 4h	>2,42 mg/l

#### Skin corrosion/irritation

No data available.

#### Serious eye damage/irritation

No data available.

#### Respiratory or skin sensitisation

May cause an allergic skin reaction.

#### Germ cell mutagenicity

No data available.

#### Carcinogenicity

May cause cancer.

#### Reproductive toxicity

May damage fertility or the unborn child.

#### STOT-single exposure

No data available.

#### STOT-repeated exposure

No data available.

#### Aspiration hazard

The main symptoms are a dry mouth and metallic taste, strong garlic odour of the breath, tiredness, dizziness and gastrointestinal problems, weight loss, bluish discolouration of the nape of the neck, face and hands, nausea and loss of the sweat function.

#### Ingestion hazard

The main symptoms are a dry mouth and metallic taste, strong garlic odour of the breath, tiredness, dizziness and gastrointestinal problems, weight loss, bluish discolouration of the nape of the neck, face and hands, nausea and loss of the sweat function.

Ingestion of copper compounds may cause a pronounced gastrointestinal irritation, effect on the central nervous system, liver and kidney damages, hemolysis and methemoglobinemia.

#### Skin contact

Solutions and dust of copper compounds may cause eczema or irritation of the skin.

#### Long term effects

Reproductive toxicity: This product contains teratogenic substances, which may produce anomalies and/or developmental defects to the human offspring. Adverse effects include: death, growth retardation, congenital disorders, delayed mental development, and functional disorders.

Reproductive toxicity: This product contains reprotoxic substances, which may harm the reproductive

According to EC-Regulation 2015/830

capacity. Adverse effects include: sterility, effects on the sexual function, lowered effective fertility and dysfunctional menstrual cycle.

Carcinogenic effects: This product contains substances considered or proven to be carcinogenic. The carcinogenic effects may be triggered subsequent to exposure through inhalation, skin contact or ingestion.

## SECTION 12: Ecological information

### 12.1. Toxicity

Substance	Species	Test	Duration	Result
Tellurium	Fish	LC50	96h	21,6 mg/l
Copper ion	Fish, <i>Oncorhynchus mykiss</i>	LC50	96h	0,017 mg/l
Copper ion	<i>Daphnia, hyalina</i>	EC50	48h	0,0065 mg/l
Copper ion	Algae, <i>Selenastrum capricornutum</i>	IC50	72h	0,392 mg/l

Even small amounts of copper ions are very toxic to aquatic organisms. The potential to form ions from solid metal depends on the particle size and factors in the surrounding environment, such as pH, redoxpotential and the amount of organic material. An acidic pH is favouring the solubility of copper compounds.

Copper in form of powder, is considered as very toxic to fish and other aquatic organisms.

### 12.2. Persistence and degradability

Substance	Biodegradability	Test	Result
-----------	------------------	------	--------

No data available.

Inorganic metal compounds or metal ions are not biodegraded in the environment, but may with time abiotically transform into other compounds or states. The extent of the transformation depends on for example the size of the particles, oxygen supply, pH, the composition of organic and inorganic material in ground, water and sediment.

### 12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BCF
-----------	---------------------------	--------	-----

No data available.

Copper: BCF 29

### 12.4. Mobility in soil

Solid metal is immobile but if other states are formed, after being present for a longer period in the environment, the mobility depends on for example oxygen supply, pH, and the composition of organic and inorganic compounds in the ground, water and sediment.

### 12.5. Results of PBT and vPvB assessment

The PBT and vPvB criteria do not apply to inorganic substances.

### 12.6. Other adverse effects

This product contains substances that are toxic to the environment. May result in adverse effects to aquatic organisms.

This product contains substances, which due to poor biodegradability, may cause adverse long-term effects to the aquatic environment,

The product can raise the levels of ecotoxic metals in the sludge from the sewage treatment works.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Product is covered by the regulations on hazardous waste.

The waste of surplus/unused products: Contact appropriate authorities. Wastes containing more than 3 % of this substance is hazardous waste of property H6.

#### Waste

EWC code

06 04 05\*

wastes containing other heavy metals

#### Specific labelling

-

#### Contaminated packing

Contaminated packaging must be disposed of similarly to the product.

## SECTION 14: Transport information

### 14.1 – 14.4

This product is within scope of the regulations of transport of dangerous goods.

#### ADR/RID

According to EC-Regulation 2015/830

<b>14.1. UN number</b>	3284
<b>14.2. UN proper shipping name</b>	TELLURIUM COMPOUND, N.O.S.
<b>14.3. Transport hazard class(es)</b>	6.1
<b>14.4. Packing group</b>	III
<b>Notes</b>	-
<b>Tunnel restriction code</b>	E

**IMDG**

<b>UN-no.</b>	3284
<b>Proper Shipping Name</b>	TELLURIUM COMPOUND, N.O.S.
<b>Class</b>	6.1
<b>PG*</b>	III
<b>EmS</b>	F-A, S-A
<b>MP**</b>	Yes
<b>Hazardous constituent</b>	-

**IATA/ICAO**

<b>UN-no.</b>	3284
<b>Proper Shipping Name</b>	TELLURIUM COMPOUND, N.O.S.
<b>Class</b>	6.1
<b>PG*</b>	III

**14.5. Environmental hazards**

This product contains substances, which due to poor biodegradability, may cause adverse long-term effects to the aquatic environment,

**14.6. Special precautions for user**

Transport in a sack with an inner plastic sack.  
Label 6.1

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

Harmful to the marine environment (HME)

(\*) Packing group

(\*\*) Marine pollutant

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Restrictions for application**

People under the age of 18 shall not be exposed to this product cf. Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work.

Industrial use only.

Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

**Demands for specific education**

-

**Additional information**

-

**Sources**

EC regulation 1907/2006 (REACH)  
Directive 2000/532/EC  
EC Regulation 1272/2008 (CLP)  
EH40/2005

**15.2. Chemical safety assessment**

No

**SECTION 16: Other information****Full text of H-phrases as mentioned in section 3**

H317 - May cause an allergic skin reaction.

H350 - May cause cancer.



According to EC-Regulation 2015/830

H360 - May damage fertility or the unborn child.

H411 - Toxic to aquatic life with long lasting effects.

**The full text of identified uses as mentioned in section 1**

-

**Additional label elements**

Not applicable

**Other**

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a blue triangle.

**Emergency telephone number**

Austria: Poison Control Centre Emergency helpline +43 1 406 43 43, 112

Belgium: 070 - 245 245

Bulgaria: +359 2 9154 409

Czech Republic: Toxikologické informační středisko Telefon: +420 224 919 293, +420 224 915 402

Denmark: Kontakt Giftlinien på tf.nr.: 82 12 12 12 (åbent 24 timer i døgnet).

Estonia: 112, 16662, ((+372) 626 93 90)

Finland: 09-4711/Myrkytystietokeskus tai suora numero 09-471977 Myrkytystietokeskus/HUS, Tukholmankatu 17, 00029 HUS (Helsinki) 112

France: ORFILA (INRS) : + 33 (0)1 45 42 59 59. 24 heures sur 24 et 7 jours sur 7

Germany: Giftnotruf Berlin, Emergency telephone: +49 30 19240 (Tag und Nacht)

Greece: +30 10 779 3777

Hungary: Telefon: 06-80-20-11-99

Iceland: Neyðarlínan: Sími 112. Eitrunarmiðstöð Landsspítalans. Sími: 543 2222.

Ireland: +353 1 8379964

Italy: Centro antiveleni di Roma - Policlinico Umberto I tel. 06-49978000

Latvia: +371 704 2468

Lithuania: Visuomenės sveikatos centrams +370 5 236 20 52 arba +370 687 53378

Malta: 2425 0000

Netherlands: 30-2748888

Norway: Giftinformasjonssentralen på tf.nr.: 22 59 13 00, 113

Poland: +48 58301 65 16 / +48 58 349 2831

Portugal: Em caso de intoxicação, ligue 808 250 143

Romania: +40 21 3183606

Slovakia: +421 2 54 77 4166

Slovenia: + 386 41 650500

Spain: Servicio de Información Toxicológica Teléfono: + 34 91 562 04 20 (solo emergencias toxicológicas) Información en español (24h/365 días)

Sweden: 112, 08-331231 (vardagar kl 9-17)

United Kingdom: 999 (or 111 for non-emergency medical advice). Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department or the NHS enquiry service)

**Date of last essential change  
(First cipher in SDS version)**

-

**Date of last minor change  
(Last cipher in SDS version)**

-