

SAFETY DATA SHEET

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

1.1. Product identifier

Trade name

Copper telluride, Rönnskär

Product no.

-

REACH registration number

01-2120121961-62-XXXX (UVCB)

Other means of identification

NA

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

Relevant identified uses of the substance or mixture

For use only as intermediate for metal production.

Uses advised against

1.3. Details of the supplier of the safety data sheet

Company and address

Boliden Commercial

Box 750

SE-101 35 Stockholm

Sweden

Tel +46 8 610 15 00

Fax +46 8 31 55 45

Contact person

E-mail

info.market@boliden.com

SDS date

01-11-2019

SDS Version

1.2

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

STOT RE 1; H372 Repr. 1B; H360 Muta. 2; H341 Carc. 1A; H350 Acute Tox. 3; H301 Resp. Sens. 1; H334 Skin Sens. 1; H317 Acute. Tox. 4; H332 Eye Irrit. 2; H319 Skin Irrit. 2; H315

Aquatic Chronic 1; H410 Aquatic Acute 1; H400



See full text of H-phrases in section 2.2.

2.2. Label elements

Hazard pictogram(s)



Signal word

Danger!

Hazard statement(s)

Causes damage to organs through prolonged or repeated exposure. (H372)

May damage fertility or the unborn child. (H360)

Suspected of causing genetic defects. (H341)

May cause cancer. (H350) Toxic if swallowed. (H301)

May cause allergy or asthma symptoms or breathing difficulties if inhaled. (H334)

May cause an allergic skin reaction. (H317)

Harmful if inhaled. (H332)

Causes serious eye irritation. (H319)

Causes skin irritation. (H315)

Very toxic to aquatic life with long lasting effects. (H410)

General

Prevention Wash hands/exposed areas/exposed skin/hands and exposed skin

thoroughly after handling. (P264).

Safety

Do no eat, drink or smoke when using this product. (P270).

statement(s) Response Specific treatment (see on this label). (P321).

IF SWALLOWED: Immediately call a POISON CENTER/doctor.

(P301+P310).

Storage Store locked up. (P405).

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 an UVCB substance, including: Tellurium, Copper, Selenium, Silver, Sulfur, Lead, Nickel, Arsenic.

2.3. Other hazards

-

Additional labelling

-

Additional warnings

voc

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SECTION 3: Composition/information on ingredients

3.1. Substances

NAME: copper telluride

IDENTIFICATION NOS.: CAS-no: -, EC-no: 943-528-5

CONTENT: 10-65

CLP CLASSIFICATION: Acute Tox. 4, Acute Tox. 3, STOT RE 1, Skin Irrit. 2, Eye Irrit. 2, Resp. Sens. 1, Skin Sens. 1,

Muta. 2, Carc. 1A, Repr. 1B, Aquatic Acute 1, Aquatic Chronic 1

H301, H315, H317, H319, H332, H334, H341, H350, H360, H372, H400, H410

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 informations

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

Various copper tellurides. Cu2Te, rickardite, teineite and others, 10-65%

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

Tellurium metal (236-813-4 /13494-80-9), 0-20%

Copper compounds, cuprit, posnjakite, atacamite, 30-50%

Selenium and selenium compounds, CuSe, CuTeSe, Se, 0-2.5%

Silver compounds; metal, Ag2Te, others, 0-<10%

Sulfur (231-722-6 /7704-34-9), 0-3.5%

Lead metal (231-100-4 /7439-92-1), 0-<0.3%

Nickel compounds, 0-<9.9%

Arsenic compounds; BiAsO4, oxides, 0.2-<1%

Various metals and metal compounds not contributing to classification (SiO2, BaSO4, Ag, Sn...), 0.1-2%

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 continue. Never give an unconscious person water or similar.

Inhalation

Get the injured person into fresh air. Make sure there is always someone with the injured person. Prevent shock by keeping the injured person warm and calm. If the person stops breathing, give mouth-to-mouth resuscitation. If unconscious, roll the injured person onto side with the top leg bent at both knee and hip. Call an ambulance.

Skin contact

Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Contact a doctor if the complaints persist.

Eye contact

Remove contact lenses. Flush eyes with water (20-30°C) for at least 15 minutes. Call a doctor.

Ingestion

In the case of ingestion, contact a doctor immediately and take this safety data sheet or the label from the material with you. If the person is conscious, give them water. DO NOT try to induce vomiting. Hold head facing down so that no vomit runs back into the mouth and throat. Prevent shock by keeping the injured person warm and calm. Give mouth-to-mouth resuscitation if breathing stops. If unconscious, roll the injured person onto side with the top leg bent at both knee and hip. 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 tellur 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.

Reproductive toxicity: This product contains teratogenic substances which can do long-term damage to human offspring. The effects on the child can be: death, deformity, delayed development, and functional



disorders.

Carcinogenic effects: This product contains substances which are considered or proven to be carcinogenic. The danger may lie in inhalation, skin contact or ingestion.

Reproductive toxicity: This product contains substances which can do damage to reproductive capacity, e.g. damage to germ cells or hormonal regulation. The effects can be: sterility, reduced fertility, menstruation disorders, etc.

Sensitivity effects: This product contains substances which can give an allergic reaction on contact with skin. The allergic reaction will typically set in 12-72 hours after exposure as the substance penetrates the skin and reacts with proteins in the outer skin. The body's immune system sees the chemically changed protein as a foreign body and will try to destroy it.

Sensitivity effects: This product contains substances which can give an allergic reaction when inhaled. The allergic reaction allergy will typically set in an hour after exposure and give an inflammatory reaction in the lungs.

Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

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. Water jets 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.

If the product is exposed to high temperatures, as in the case of fire, dangerous catabolic substances are produced. These are: Carbon oxides. Fire will result in thick black smoke. Exposure to catabolic products can damage your health. Fire fighters should use proper protection gear. Closed containers, which are exposed to fire, should be cooled with water. Do not let fire-extinguishing water run into sewers and other water courses.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapours from waste material. Avoid direct contact with spilled substances. Use personal protective equipment.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of a leakage to the surroundings, contact the local environmental authorities. Consider putting up waste collecting trays/basins to prevent leakage to the surroundings.

6.3. Methods and material for containment and cleaning up

Collect immediately by sweeping or vacuuming. Spilled material is collected in an appropriate container for disposal.

6.4. Reference to other sections

See section 13 with regard to the handling of waste. See section 8 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 described 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 | 0.2 mg/m³

Copper fume (as Cu)

Long-term exposure limit (8-hour TWA reference period): - ppm | 0.2 mg/m³

Copper and compounds: dust and mists (as Cu)

Long-term exposure limit (8-hour TWA reference period): - ppm | 1 mg/m³ Short-term exposure limit (15-minute reference period): - ppm | 2 mg/m³

Selenium and compounds, except hydrogen selenide (as Se)

Long-term exposure limit (8-hour TWA reference period): - ppm | 0.1 mg/m³

Silver, soluble compounds (as Ag)

Long-term exposure limit (8-hour TWA reference period): -ppm | 0.01 mg/m³

Silver, metallic

Long-term exposure limit (8-hour TWA reference period): -ppm | 0.1 mg/m³

Lead and inorganic compounds (as Pb)

Long-term exposure limit (8-hour TWA reference period): - ppm | 0.15 mg/m³

Nickel and its inorganic compounds (except nickel tetracarbonyl):

Long-term exposure limit (8-hour TWA reference period): - ppm | 0.1 mg/m³ (water-soluble nickel compounds (as Ni))

Long-term exposure limit (8-hour TWA reference period): - ppm | 0.5 mg/m³ (water-insoluble nickel compounds (as Ni))

Arsenic & compounds, except arsine (as As)

Long-term exposure limit (8-hour TWA reference period): - ppm | 0.1 mg/m³

DNEL / PNEC

No data available.

8.2. Exposure controls

Compliance with the stated exposure limits values should be checked on a regular basis.

General recommendations

Observe general occupational hygiene.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.

Exposure limits

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values, section 8.1.

Appropriate technical measures

Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values. Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.

Hygiene measures

Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

Measures to avoid environmental exposure

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

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

Silver powder is very toxic to aquatic life and very toxic to aquatic life with long lasting effects.

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

Only CE-marked personal protection equipment should be used.

Respiratory Equipment

If the ventilation at the work place is not sufficient, use a half or whole mask with an appropriate filter or an air-supplied respiratory protector. The choice depends on the concrete work situation and how long you will be using the product.

Skin protection

Special work clothing should be used. When working with this product for a long period of time, use a protective suit.

Hand protection

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

Eye protection

Wear safety glasses when exposed for dust. When needed, use face mask.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form Colour Odour pH Viscosity Density (g/cm3)

Solid Black None - - 7.27

Phase changes

Melting point (°C) Boiling point (°C) Vapour pressure (mm Hg)

870

Data on fire and explosion hazards

Flashpoint (°C) Ignition (°C) Self ignition (°C)

-

Explosion limits (Vol %) Oxidizing properties

Solubility

Solubility in water n-octanol/water coefficient

Insoluble -

9.2. Other information

Solubility in fat Additional 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 the conditions noted in section 7.

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 body weight

Tellurium Rat LC50 Inhalation, 4h >2,42 mg/L

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ cell mutagenicity

Suspected of causing genetic defects.

Carcinogenicity

May cause cancer.

Reproductive toxicity

May damage fertility or the unborn child.

STOT-single exposure

No data available.

STOT-repeated exposure

Causes damage to organs.

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 can do long-term damage to human offspring. The effects on the child can be: death, deformity, delayed development, and functional disorders. Reproductive toxicity: This product contains substances which can do damage to reproductive capacity, e.g. damage to germ cells or hormonal regulation. The effects can be: sterility, reduced fertility, menstruation disorders, etc.

Carcinogenic effects: This product contains substances which are considered or proven to be carcinogenic. The danger may lie in inhalation, skin contact or ingestion.

Sensitivity effects: This product contains substances which can give an allergic reaction on contact with skin. The allergic reaction will typically set in 12-72 hours after exposure as the substance penetrates the skin and reacts with proteins in the outer skin. The body's immune system sees the chemically changed protein as a foreign body and will try to destroy it.

Sensitivity effects: This product contains substances which can give an allergic reaction when inhaled. The allergic reaction allergy will typically set in an hour after exposure and give an inflammatory reaction in the lungs.

Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.



SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Test duration	Result
Tellurium	Fish	LC50	96h	21.6 mg/l
Copper ion	Fish, Oncorhynchus mykiss	LC50	96h	0.017 mg/l
Copper ion	Daphnia, hyalina	EC50	48h	0.0065 mg/l
Copper ion	Algae, Selenastrum capricornutum	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, redox potential 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 BFC

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 ecotoxic substances which can have damaging effects on water-organisms. This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

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

The product is covered by the regulations on dangerous 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*

Specific labelling

Contaminated packing

Packaging which contains leftovers from the product must be disposed of in the same way as the product.

SECTION 14: Transport information

This product is covered by the conventions on dangerous goods.

14.1 - 14.4 ADR/RID

14.1. UN number 3284

14.2. UN proper shipping name TELLURIUM COMPOUND, N.O.S.

14.3. Transport hazard class(es)
14.4. Packing group III
Notes
Tunnel restriction code



IMDG

UN-no. 3284

Proper Shipping Name TELLURIUM COMPOUND, N.O.S.

Class 6.1 PG* Ш **EmS** F-A, S-A MP** Yes

Hazardous constituent

IATA/ICAO

UN-no. 3284

TELLURIUM COMPOUND, N.O.S. **Proper Shipping Name**

Class 6.1 PG* Ш

14.5. Environmental hazards

This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

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 MARPOL73/78 and the IBC Code

No data available

(*) 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 must not be exposed to this product cf. Council Directive 94/33/EC. Only for industrial use. Pregnant and nursing women must not be exposed to the effects of this product. The risk, and possible technical precautions or design of the workplace to avoid such risk, must therefore be evaluated.

Demands for specific education

Additional information

Sources

EC regulation 1907/2006 (REACH)

Directive 2000/532/EC

EC Regulation 1272/2008 (CLP)

EH40/2005 (Third edition, published 2018)

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3



H301 - Toxic if swallowed.

H315 - Causes skin irritation.

H317 - May cause an allergic skin reaction.

H319 - Causes serious eye irritation.

H332 - Harmful if inhaled.

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H341 - Suspected of causing genetic defects.

H350 - May cause cancer.

H360 - May damage fertility or the unborn child.

H400 - Very toxic to aquatic life.

H410 - Very toxic to aquatic life with long lasting effects.

The full text of identified uses as mentioned in section 1

Other symbols mentioned in section 2

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.

The copper telluride may contain lead and the European Chemicals Agency (ECHA) has added the lead metal on its Candidate List of Substances of Very High Concern (SVHCs), on 27 June 2018.

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 tlf.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 tlf.nr.: 22 59 13 00, 113

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

Portugal: Em caso de intoxicacao, 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) 01-06-2015 Date of last minor change (Last cipher in SDS version) 01-11-2019

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