According to EC-Regulation 1907/2006

SAFETY DATA SHEET

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

1.1. Product identifier

Trade name
Boliden Tellurium conc Te1

Product no.
-

REACH registration number
01-2119947551-36-XXXX (UVCB)

Other means of identification
Te-1

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

Relevant identified uses of the substance or mixture
Use as an intermediate in the refinement to produce tellurium metal and tellurium oxide.
Intermediate (PC19)
Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (PROC 8b)
Use in closed process, no likelihood of exposure (PROC 1)
Use in closed, continuous process with occasional controlled exposure (PROC 2)
Handling of solid inorganic substances at ambient temperature (PROC 26)
Production of metal powders (hot processes) (PROC 27a)
Production of metal powders (wet processes) (PROC 27b)
Manufacture of basic metals, including alloys (SU 14)
Industrial use resulting in manufacture of another substance (use of intermediates) (ERC6a)

Uses advised against
-
The full text of any mentioned and identified use categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address
Boliden Mineral AB
Finnsforsvägen 4
SE-936 81 Boliden
Sweden

Tel +46 910 77 40 00

Contact person
-

E-mail
info.market@boliden.com

SDS date
2019-07-03

SDS Version
2.0

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

Self-heat. 1; H251
Acute Tox. 4; H302

Skin Irrit. 2; H315
Eye Dam. 1; H318
STOT SE 3; H335
Carc. 1A; H350
Repr. 1A; H360FD
Lact.; H362
STOT RE 2; H373
Aquatic Acute 1; H400
Aquatic Chronic 1; H410
See full text of H-phrases in section 2.2.

2.2. Label elements

Hazard pictogram(s)

Signal word

Danger

Hazard statement(s)

Self-heating: may catch fire. (H251)
Harmful if swallowed. (H302)
Causes skin irritation. (H315)
Causes serious eye damage. (H318)
May cause respiratory irritation. (H335)
May cause cancer. (H350)
May damage fertility. May damage the unborn child. (H360FD)
May cause harm to breast-fed children. (H362)
May cause damage to organs (the central nervous system and systems for reproduction) through prolonged or repeated exposure. (H373)
Very toxic to aquatic life with long lasting effects. (H410)

Safety statement(s)

General	-
Prevention	Avoid breathing dust. (P261). Wash hands thoroughly after handling. (P264). Avoid release to the environment. (P273). Wear protective gloves/protective clothing/eye protection/face protection. (P280)
Response	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305+P351+P338).
Storage	Maintain air gap between stacks/pallets. (P407).
Disposal	Dispose of contents/container to an authorized hazardous waste treatment according to local and national waste management regulations. (P501).

Identity of the substances primarily responsible for the major health hazards

Tellurium concentrate is a UVCB substance, including: Lead, Tellurium, Iron, Arsenic and Mercury.

2.3. Other hazards

-

Additional labelling

Not applicable

Additional warnings

-

VOC

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

NAME:	Tellurium concentrate
IDENTIFICATION NOS.:	EC-no: 700-872-9
CONTENT:	100%
CLP CLASSIFICATION:	Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, STOT SE 3, Carc. 1A, Repr. 1A, Lact., STOT RE 2, Aquatic Acute 1, Aquatic Chronic 1 H302, H315, H318, H335, H350, H360FD, H362, H373, H400, H410 (M-acute = 1) (M-chronic = 1)

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

Tellurium concentrate is a UVCB substance, including (name (EC/CAS), concentration):
Tellurium (236-813-4/13494-80-9), 35-65%
Bismuth (231-177-4/7440-69-9), 10-40%
Iron(III)oxide (215-168-2/1309-37-1), 0-5%
Iron(III)sulphate (231-753-5/7720-78-7), 0-5%
Lead (231-100-4/7439-92-1) 0,03-<1%
Arsenic (231-148-6/7440-38-2), 0-<1%
Mercury (231-106-7/7439-97-6), 0-1%

ATEmix(oral) = 400 - 600
Eye Cat. 1 Sum = Sum(Ci/S(G)CLi) = 26,6664 - 39,9996
Skin Cat. 2 Sum = Sum(Ci/S(G)CLi) = 8 - 12
N chronic (CAT 1) Sum = Sum(Ci/(M(chronic)i*25)) = 3,2 - 4,8
N acute (CAT 1) Sum = Sum(Ci/M(acute)i*25) = 3,2 - 4,8

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

Bring the injured person into fresh air. Make sure the injured person is continuously monitored. Prevent shock by keeping the injured person warm and calm. If breathing ceases, give mouth-to-mouth resuscitation. If unconscious, roll the injured person into recovery position. Call an ambulance.

Skin contact

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with soap and water.

Eye contact

Remove contact lenses. Flush eyes with plenty of water or salt water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure you flush under the upper and lower eyelids. Seek medical assistance immediately and continue flushing.

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.

Burns

Rinse with water until the pain stops then continue to rinse for a further 30 minutes.

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

Reproductive toxicity: This product contains teratogenic substances which can do long-term damage to human offspring. The effects on the child can be: 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.
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. Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

Nothing special

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 dust. Avoid direct contact with spilled substances. Storages not yet ignited must be cooled by water mist. Remove flammable materials if conditions allow it. Ensure sufficient ventilation. Use personal protective equipment.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of leakage to the surroundings, contact local environmental authorities. It is recommended to install waste collection trays to prevent emissions to the waste water system and surrounding environment.

6.3. Methods and material for containment and cleaning up

Collect spills carefully. Moist the material with water in order to prevent the formation and propagation of dust. 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

Smoking, storage of tobacco, consumption and storage of food or liquids are not allowed in the workrooms. It is recommended to install waste collection trays to prevent emissions to the waste water system and surrounding environment. See section on 'Exposure controls/personal protection' for information on personal protection. Avoid direct contact with the product.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. The room and chemical closet shall be provided with warning sign for toxic substances. Always store in containers of the same material as the original container. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Must be stored in a cool and well-ventilated area, away from possible sources of ignition.

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): 0,1 mg/m3

Iron oxide, fume or respirable dust (as Fe)
Long-term exposure limit (8-hour TWA reference period): 5 mg/m3
Short-term exposure limit (15-minute reference period): 10 mg/m3

Lead and inorganic compounds (as Pb)
Long-term exposure limit (8-hour TWA reference period): 0,15 mg/m3

Arsenic & compounds, except arsine (as As)
total dust, classified as C1A and C1B
Long-term exposure limit (8-hour TWA reference period): 0,1 mg/m3

Mercury & its inorganic divalent compounds (as Hg)
Long-term exposure limit (8-hour TWA reference period): 0,02 mg/m3

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

Airborne gas and dust concentrations must be kept at a minimum and below current limit values (see above). Installation of an exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure emergency eyewash and -showers are clearly marked.

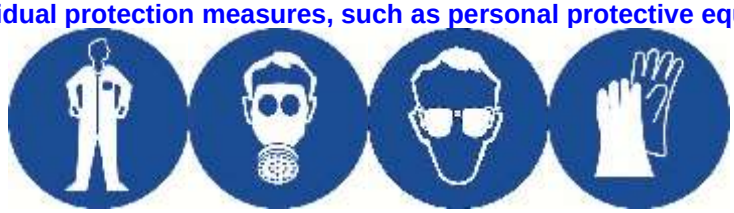
Hygiene measures

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

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.

Eye protection

Use face shield. Use safety glasses with a side shield as an alternative.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Powder
Colour	Grey-black
Odour	None
Odour threshold (ppm)	No data available.
pH	Not relevant
Viscosity (40°C)	No data available.
Density, bulk (g/cm³)	7,8
Phase changes	
Melting point (°C)	>270
Boiling point (°C)	>988
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, metallic material.
n-octanol/water coefficient	No data available.

9.2. Other information

Solubility in fat (g/L)	No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity
No data available

10.2. Chemical stability
Self-heating: may catch fire.

10.3. Possibility of hazardous reactions
Nothing special

10.4. Conditions to avoid
Avoid static electricity.

10.5. Incompatible materials
Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

10.6. Hazardous decomposition products
The product is not degraded when used as specified in section 1.

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
This product contains substances which cause irritation to skin.
Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

Serious eye damage/irritation
Causes serious eye damage.

Respiratory or skin sensitisation
No data available.

Germ cell mutagenicity
No data available.

Carcinogenicity
May cause cancer.

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

STOT-single exposure
May cause respiratory irritation.

STOT-repeated exposure
May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard
No data available.

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: growth retardation, congenital disorders, delayed mental development, and functional disorders.
Reproductive toxicity: This product contains reprotoxic substances, which may harm the reproductive 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.
Irritation effects: This product contains substances, which may cause irritation upon exposure to skin, eyes or lungs. Exposure may result in an increased absorption potential of other hazardous substances at the area of exposure.

SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Duration	Result
Tellurium	Fish	LC50	96h	21,6 mg/l

12.2. Persistence and degradability
Inorganic metal compounds or metal ions are not degradable in the environment, but may in time be converted abiotically to other compounds or forms. The extent of the change depends on, for example, the size of the particles, oxygen, pH, composition of organic and inorganic material in the soil, water and sediments.

Substance	Biodegradability	Test	Result
No data available.			

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BCF
No data available.			

12.4. Mobility in soil
No data available

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,

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Product is covered by the regulations on hazardous waste.

Waste

EWC code	
06 04 05*	wastes containing other heavy metals

Specific labelling
-

Contaminated packing
The waste category is indicative and depend on the use of the waste. 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

14.1. UN number	3191
14.2. UN proper shipping name	SELF-HEATING SOLID, TOXIC, INORGANIC, N.O.S. (Tellurium dioxide, Bismuth oxide)
14.3. Transport hazard class(es)	4.2 (6.1)
14.4. Packing group	III
Notes	-
Tunnel restriction code	E

IMDG

UN-no.	3191
Proper Shipping Name	SELF-HEATING SOLID, TOXIC, INORGANIC, N.O.S. (Tellurium dioxide, Bismuth oxide)
Class	4.2 (6.1)
PG*	III
EmS	F-A, S-J
MP**	Yes
Hazardous constituent	-

IATA/ICAO

UN-no.	3191
Proper Shipping Name	SELF-HEATING SOLID, TOXIC, INORGANIC, N.O.S. (Tellurium dioxide, Bismuth oxide)
Class	4.2 (6.1)
PG*	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

-

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

HME – Harmful to Marine Environment

(*) 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)

EC Regulation 1272/2008 (CLP)

EH40/2005 Workplace exposure limits

Council Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding.

Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work.

The Control of Substances Hazardous to Health Regulations 2002. SI 2002/2677. The Stationery Office, 2002.

Directive 2008/98/EC on waste

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.
H350 - May cause cancer.
H362 - May cause harm to breast-fed children.
H373 - May cause damage to organs through prolonged or repeated exposure¤.
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.
H360FD - May damage fertility. May damage the unborn child.

The full text of identified uses as mentioned in section 1

PC19 = Intermediate
PROC 8b = Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC 1 = Use in closed process, no likelihood of exposure
PROC 2 = Use in closed, continuous process with occasional controlled exposure
PROC 26 = Handling of solid inorganic substances at ambient temperature
PROC 27a = Production of metal powders (hot processes)
PROC 27b = Production of metal powders (wet processes)
SU 14 = Manufacture of basic metals, including alloys
ERC6a = Industrial use resulting in manufacture of another substance (use of intermediates)

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 numbers

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)

2017-05-08

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

2017-05-08