

Material Safety Data Sheet

Tellurium Oxide Powder

Report No.: VIH250221005-1
Version: 2.1
Preparation Date: 21/02/2025
Revision Date: 21/02/2025

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	Tellurium Oxide
Product No.	520800PD
Formula	TeO ₂
CAS No.	7446-07-3
Synonyms	Tellurium(IV) oxide, Tellurium dioxide

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

Identified uses	Laboratory chemicals, Scientific research
Uses advised against	Consulting manufacturers

1.3 Details of the supplier of the safety data sheet

Company Name	VI HALBLEITERMATERIAL GmbH
Street	Bergener Straße 14.,
City	Hannover
State	Niedersachsen
Zip Code	30625
Country	Germany
Tel	0049 1626484175
Email	info@vimaterial.de
Website	https://vimaterial.de/

1.4 Emergency telephone number

Emergency Phone #	0049 1626484175
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2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Acute toxicity, Inhalation	Category 4
Skin sensitization	Sub-category 1B
Reproductive toxicity	Category 1B
Effects on or via lactation	
Acute aquatic hazard	Category 2
Chronic aquatic hazard	Category 2

For full text of abbreviations: see SECTION 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal Word	Danger
Label	

Hazard Statements

H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H360	May damage fertility or the unborn child.
H362	May cause harm to breast-fed children.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust.
P263	Avoid contact during pregnancy/ while nursing.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response	

P302 + P352	IF ON SKIN: Wash with plenty of water.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P391	Collect spillage.
Storage	
P405	Store locked up.
Disposal	
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

According to the results of its assessment, this substance is not a PBT or a vPvB.

This product does not contain any known or suspected endocrine disruptors.

3. Composition/information on ingredients

3.1 Substances

Chemical Family	Ceramic
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Component	CAS No.	EC No.	Concentration
Tellurium Oxide (TeO ₂)	7446-07-3	231-193-1	<=100%

4. First aid measures

4.1 Description of first aid measures

General Treatment	If symptoms persist, seek medical attention.
Inhalation	Remove victim to fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.
Skin	Take off immediately all contaminated clothing. Rinse skin with water/ shower. Seek medical attention.
Eyes	Rinse with pure water for at least 15 minutes. Remove contact lenses, if present and easy to do. Seek medical attention.
Ingestion	Make victim drink water (two glasses at most). Consult doctor if feeling unwell.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

1	Based on the symptoms that appear, provide targeted treatment.
2	Be aware that symptoms may be delayed.

5. Firefighting Measures

5.1 Extinguishing Media

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	N/A

5.2 Special hazards arising from the substance or mixture

1	Tellurium oxides
2	Non-flammable
3	Ambient fires may release harmful vapors.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
2	Fight fire from a safe distance and with adequate protection. Do not allow firefighting water to enter drains or water courses.
3	Collect contaminated firefighting water separately.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Remove persons to safety. Use personal protective equipment as required. Avoid dust formation. Remove all sources of ignition. Take precautionary measures against static discharges.
For emergency responders	Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental Precautions

1	Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.
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6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill	Covering of drains, Take up mechanically.
Advice on how to clean up a spill	Take up mechanically. Take care not to raise dust.
Other information relating to spills and releases	Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

7. Handling and Storage

7.1 Precautions for safe handling

Recommendations	Wear personal protective equipment/face protection. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.
Hygiene Measures	Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feeding stuffs.

7.2 Conditions for safe storage, including any incompatibilities

Explosive atmospheres	Removal of dust deposits.
Ventilation requirements	Keep containers tightly closed in a dry, cool and well-ventilated place.
Flammability hazards	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
Incompatible Materials.	See section 10.5

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Biological limit values:

No biological limit values established.

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

Exposure scenario	Route of exposure	Population	DNEL / DMEL value
chronic - systemic effects	inhalatory	worker (industry)	DNEL=0,58 mg/m ³
chronic - systemic effects	dermal	worker (industry)	DNEL=0,83 mg/kg bw/day

Predicted No-Effect Concentration (PNEC)

Exposure scenario	Organism	Environmental compartment	PNEC value
short-term (single instance)	aquatic organisms	freshwater	PNEC=7,24 µg/l
short-term (single instance)	aquatic organisms	marine water	PNEC=0,724µg/l
short-term (single instance)	aquatic organisms	sewage treatment plant (STP)	PNEC=3,2 mg/l
intermittent release	aquatic organisms	water	PNEC=72,4 µg/l

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) (European standard - EN166) and face protection.

Skin protection

-Hand Protection

Protective gloves (The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.)

-Other protection measures

Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory Protection

No protective equipment is needed under normal use conditions.

Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved
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	respirator if exposure limits are exceeded or if irritation or other symptoms are experienced Recommended Filter type: Particulates filter
Small scale/Laboratory use	Maintain adequate ventilation

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

9. Physical and Chemical Characteristics

9.1 Information on basic physical and chemical properties

Physical State	Powder
Colour	White
Odor	Odorless
Melting Point/Range	733 °C
Boiling Point/Range	1.245 °C
Flammability (liquid)	Not applicable
Flammability (solid, gas)	The product is not flammable.
Explosion limits	Not determined
Flash Point	Not applicable
Autoignition Temperature	No data available
Decomposition Temperature	No data available
pH	Not applicable
Viscosity	Not relevant (solid matter)
Water Solubility	Insoluble
Solubility in other solvents	No data available
Partition Coefficient (n-octanol/water)	No data available
Vapor Pressure	Not determined
Density / Specific Gravity	5,67 g/cm ³
Vapor Density	Not applicable
Particle characteristics	No data available

9.2 Other information

Molecular formula	TeO ₂
Molecular weight	159,6 g/mol
Evaporation Rate	Rate Not applicable - Solid

10. Stability and reactivity

10.1 Reactivity

None known, based on information available.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous Polymerization: Hazardous polymerization does not occur.

Hazardous Reactions: None under normal processing.

10.4 Conditions to avoid

Incompatible products.

10.5 Incompatible materials

Strong oxidizing agents, Strong acids, Finely powdered metals.

10.6 Hazardous decomposition products

In the event of fire: see section 5

11. Toxicological information

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

Acute toxicity	Oral:	LD50 - Rat - > 5.000 mg/kg
	Dermal:	No data available
	Inhalation:	LC50 - Rat - 2,42mg/l - 4 h - dust/mist
Skin corrosion/irritation	No data available.	
Serious eye damage/irritation	No data available.	
Respiratory or skin sensitization	Respiratory	No data available.
	Skin	May cause an allergic skin reaction
Germ cell mutagenicity	No data available.	
Carcinogenicity	No data available.	
Reproductive toxicity	May damage the unborn child.	
	Suspected of damaging fertility.	
	May cause harm to breastfed children.	
STOT - single exposure	No data available.	
STOT - repeated exposure	No data available.	
Aspiration hazard	Not applicable. Solid	

11.2 Information on other hazards

Endocrine Disrupting Properties: Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

12. Ecological Information

12.1 Toxicity

Toxicity to fish	semi-static LC50 > 100 mg/l - 96 h
Toxicity to aquatic invertebrates	Static test EC50 - 7,24 mg/l - 48 h
Toxicity to algae	Static test ErC50 - > 14,7 mg/l - 72 h
Toxicity to microorganisms	Static test EC50 - activated sludge - 320 mg/l - 3 h

12.2 Persistence and degradability

Persistence	No data available.
Degradability	No data available.

12.3 Bioaccumulative potential

Bioaccumulative potential	No data available.
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12.4 Mobility in soil

Mobility in soil	No data available.
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12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	In accordance with Annex XIII of the REACH Regulation, inorganic substances donot require assessment.
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12.6 Endocrine disrupting properties

Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors.
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12.7 Other adverse effects

Persistent Organic Pollutant	This product does not contain any known or suspected substance
Ozone Depletion Potential	This product does not contain any known or suspected substance

13. Disposal Considerations

13.1 Waste treatment methods

Dispose of in accordance with all applicable local and national regulations. Use recovery/recycling where feasible, otherwise incineration is the recommended method of disposal. Empty containers may contain hazardous residues. Do not cut, puncture or weld on or near to the container. Labels should not be removed from containers until they have been cleaned. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers.

14. Transport information

IMDG

14.1. UN number	UN 3077
14.2. UN Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (tellurium dioxide)
14.3. Transport hazard class(es)	9
14.4. Packaging group	III

ADR/RID/ADN

14.1. UN number	UN 3077
14.2. UN Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (tellurium dioxide)
14.3. Transport hazard class(es)	9
14.4. Packaging group	III

ICAO-IATA/DGR

14.1. UN number	UN 3077
14.2. UN Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (tellurium dioxide)
14.3. Transport hazard class(es)	9
14.4. Packaging group	III

14.5. Environmental hazards	hazardous to the aquatic environment
14.6. Special precautions for user	Provisions for dangerous goods (ADR) should be complied within the premises.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

15. Regulatory information

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

This Safety Data Sheet is prepared in accordance with Commission Regulation (EC) 1907/2006, amended by Commission Regulation (EU) 2020/878.

Authorisations/Restrictions

Regulation (EC) 1907/2006, REACH, Annex XIV list of substances subject to authorisation:	Not applicable
Regulation (EC) 1907/2006, REACH, Annex XVII restrictions on the manufacture, placing on the market and use of certain dangerous substances:	Use restricted. See item 75. (see link for restriction details)
Regulation (EC) 1005/2009 on substances that deplete the ozone layer:	Not applicable
Regulation (EC) 850/2004 on persistent organic pollutants, amended by (EU) No 2019/1021:	Not applicable

REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

16. Other information

Revision information

Preparation date	21/02/2025
Revision date	21/02/2025
Revision reason	Creation

Abbreviations and acronyms

CAS	Chemical Abstracts Service
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
RID	Regulation concerning the International Carriage of Dangerous Goods by Rail
IATA	International Air Transportation Association
IMDG	International Maritime Dangerous Goods
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%

TWA	Time Weighted Average
STOT	Specific target organ toxicity
PBT	Persistent, Bioaccumulative, Toxic
vPvB	Very Persistent, very Bioaccumulative
WEL	Workplace exposure limit

References

- [1] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- [2] ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>
- [3] eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- [4] Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- [5] HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- [6] IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- [7] IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- [8] ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

List of relevant phrases (code and full text as stated in chapter 2 and 3)

H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H360	May damage fertility or the unborn child.
H362	May cause harm to breast-fed children.
H411	Toxic to aquatic life with long lasting effects.

Disclaimer

The information of this safety data sheet is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products. For further information please contact info@vimaterial.de.