

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**Trade name **Cadmium telluride**

Stock number: 14364

CAS Number:

1306-25-8

EC number:

215-149-9

Index number:

048-001-00-5

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

Identified use: SU24 Scientific research and development

1.3 Details of the supplier of the safety data sheet**Manufacturer/Supplier:**

Thermo Fisher (Kandel) GmbH

Zeppelinstr. 7b

76185 Karlsruhe / Germany

Tel: +49 (0) 721 84007 280

Fax: +49 (0) 721 84007 300

Email: tech@alfa.com

www.alfa.com

Informing department:

Product Safety Department

Product safety Tel + +049 (0) 7275 988687-0

1.4 Emergency telephone number:

Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)

Poison Information Center Mainz

www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xn; Harmful

R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.

N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Information concerning particular hazards for human and environment: Not applicable**Other hazards that do not result in classification** No information known.**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008** The substance is classified and labelled according to the CLP regulation.**Hazard pictograms**

GHS07 GHS09

Signal word Warning**Hazard statements**

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H332 Harmful if inhaled.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell.

P312 Call a POISON CENTER/doctor/.../if you feel unwell.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

SECTION 3: Composition/information on ingredients**3.1 Substances****CAS# Designation:**

1306-25-8 Cadmium telluride

Identification number(s):

EC number: 215-149-9

Index number: 048-001-00-5

SECTION 4: First aid measures**4.1 Description of first aid measures****After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

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Seek immediate medical advice.

After skin contact

Instantly wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing Seek medical treatment.

4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

5.2 Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Toxic metal oxide smoke

5.3 Advice for firefighters

Protective equipment:

Wear self-contained breathing apparatus.

Wear full protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

6.2 Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.

6.3 Methods and material for containment and cleaning up:

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Prevention of secondary hazards: No special measures required.

6.4 Reference to other sections

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Keep containers tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires: The product is not flammable

7.2 Conditions for safe storage, including any incompatibilities

Storage

Requirements to be met by storerooms and containers: No special requirements.

Information about storage in one common storage facility: No information known.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

8.1 Control parameters

Components with critical values that require monitoring at the workplace:

Tellurium and tellurium compounds (as Te)

	mg(Te)/m ³
ACGIH TLV	0.1
Austria MAK	0.1
Belgium TWA	0.1
Denmark TWA	0.1
Finland TWA	0.1; 0.3-STEL
France VME	0.1
Germany MAK	0.1
Korea TLV	0.1
Netherlands MAC-TGG	0.1
Norway TWA	0.1
Poland TWA	0.01; 0.03-STEL
Sweden NGV	0.1
Switzerland MAK-W	0.1; 0.5-KZG-W
United Kingdom TWA	0.1
USA PEL	0.1

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Cadmium and compounds, as Cd
mg/m³

ACGIH TLV 0.01; Suspected human carcinogen
Austria Carcinogen
Belgium TWA 0.05
Denmark TWA 0.01
Finland TWA 0.02; Carcinogen
France VME 0.05
Germany Carcinogen
Ireland TWA 0.025; Carcinogen
Japan OEL 0.05; Group 1 carcinogen
Korea TLV 0.01; Suspected human carcinogen
Netherlands MAC-TGG 0.02; 0.1-MAC-K
Norway TWA 0.05
Poland TWA 0.02; 0.05-STEL (fume)
Poland TWA 0.04; 0.2-STEL (dust)
Russia 0.01; 0.05-STEL
Sweden NGV 0.05 (total dust)
Sweden TWA 0.01 (resp. dust)
Switzerland MAK-W 0.05; Carcinogen
United Kingdom TWA 0.025
USA PEL 0.005

Cadmium and compounds, as Cd
mg/m³

ACGIH TLV 0.002(Cd); Suspected human carcinogen
Austria Carcinogen
Belgium TWA 0.05
Denmark TWA 0.01
Finland TWA 0.02; Carcinogen
France VME 0.05
Germany Carcinogen
Ireland TWA 0.025; carcinogen
Japan OEL 0.05; Group 1 Carcinogen
Korea TLV 0.01; Suspected human carcinogen
Netherlands MAC-TGG 0.02; 0.1-MAC-K
Norway TWA 0.05
Poland TWA 0.02; 0.05-STEL (fume)
Poland TWA 0.04; 0.2-STEL (dust)
Russia 0.01; 0.05-STEL
Sweden NGV 0.05 (total dust)
Sweden TWA 0.01 (resp. dust)
Switzerland MAK-W 0.05; Carcinogen
United Kingdom TWA 0.025(Cd)
USA PEL (respirable) 0.2(Cd)

1306-25-8 Cadmium telluride (100,0%)

MAK (Germany)	einatembare Fraktion; vgl. Abschn. XII
TRK (TRGS 900) (Germany)	Long-term value: 0,015 G mg/m ³
PEL (USA)	Long-term value: 0,005 mg/m ³ as Cd; see 29 CFR 1910,1027
REL (USA)	See Pocket Guide App. A
TLV (USA)	Long-term value: 0,01 0,002* mg/m ³ as Cd; *respirable fraction; BEI

Additional information: No data

8.2 Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Use breathing protection with high concentrations.

Protection of hands:

Check protective gloves prior to each use for their proper condition.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Material of gloves: Impervious gloves

Eye protection: Safety glasses

Body protection: Protective work clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:	Pieces
Colour:	Black
Smell:	Odourless
Odour threshold:	Not determined.

pH-value:	Not applicable.
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Change in condition

Melting point/Melting range:	1041 °C
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point:	Not applicable
Inflammability (solid, gaseous)	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Self-inflammability:	Not determined.

Danger of explosion:	Product is not explosive.
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Critical values for explosion:	
Lower:	Not determined
Upper:	Not determined
Steam pressure:	Not applicable.

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Density at 20 °C	6,2 g/cm ³
Relative density	Not determined.
Vapour density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Insoluble
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity No information known.
10.2 Chemical stability Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided: No decomposition if used and stored according to specifications.
10.3 Possibility of hazardous reactions No dangerous reactions known
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials:
Oxidising agents
No information known.
10.6 Hazardous decomposition products: Toxic metal oxide smoke

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity:
Harmful if inhaled.
Harmful in contact with skin.
Harmful if swallowed.
Danger by skin resorption.
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: Irritant for skin and mucous membranes.
Eye irritation or corrosion: Irritant effect.
Sensitization: No sensitizing effect known.
Germ cell mutagenicity: No effects known.
Carcinogenicity:
IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.
EPA-CaH: Carcinogenic to humans.
Carcinogen as defined by OSHA.
ACGIH A2: Suspected human carcinogen: Agent is carcinogenic in experimental animals at dose levels, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) considered relevant to worker exposure. Available epidemiologic studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans.
NTP-K: Known to be carcinogenic: sufficient evidence from human studies.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity: No effects known.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12: Ecological information

12.1 Toxicity
Aquatic toxicity: No further relevant information available.
12.2 Persistence and degradability No further relevant information available.
12.3 Bioaccumulative potential No further relevant information available.
12.4 Mobility in soil No further relevant information available.
Ecotoxicological effects:
Remark: Very toxic for fish
Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
Water danger class 3 (Self-assessment): extremely hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into soil.
Also poisonous for fish and plankton in water bodies.
May cause long lasting harmful effects to aquatic life.
Avoid transfer into the environment.
Very toxic for aquatic organisms
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation
Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.
Consult state, local or national regulations for proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

UN-Number ADR, IMDG, IATA	UN3077
14.2 UN proper shipping name ADR	3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cadmium telluride)
IMDG, IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cadmium telluride)

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14.3 Transport hazard class(es)

ADR



Class
Label
IMDG

9 (M7) Miscellaneous dangerous substances and articles.
9



Class
Label
IATA

9 Miscellaneous dangerous substances and articles.
9



Class
Label

9 Miscellaneous dangerous substances and articles.
9

Packing group
ADR, IMDG, IATA

III

14.5 Environmental hazards:
Special marking (ADR):
Special marking (IATA):

Symbol (fish and tree)
Symbol (fish and tree)

14.6 Special precautions for user
Kemler Number:

Warning: Miscellaneous dangerous substances and articles.
90

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC
Code

Not applicable.

Transport/Additional information:

ADR

Excepted quantities (EQ):
Limited quantities (LQ)
Transport category
Tunnel restriction code

E1
5 kg
3
E

UN "Model Regulation":

UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Cadmium telluride), 9, III

SECTION 15: Regulatory information

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

Australian Inventory of Chemical Substances Substance is not listed.
Standard for the Uniform Scheduling of Drugs and Poisons Substance is not listed.

National regulations

Information about limitation of use:

Employment restrictions concerning young persons must be observed.
For use only by technically qualified individuals.

Water hazard class: Water danger class 3 (Self-assessment): extremely hazardous for water.

Other regulations, limitations and prohibitive regulations

ELINCS (European List of Notified Chemical Substances) Substance is not listed.

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

NTP: National Toxicology Program (USA)

IARC: International Agency for Research on Cancer

EPA: Environmental Protection Agency (USA)