

ALFAA14365

## Cadmium telluride

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**产品说明:**  
**Product Description:** 碲化镉  
**Cadmium telluride**

**Cat No. :** 14365  
**CAS No** 1306-25-8  
**Molecular Formula** Cd Te

**Supplier** Avocado Research Chemicals Ltd.  
 (Part of Thermo Fisher Scientific)  
 Shore Road, Heysham  
 Lancashire, LA3 2XY,  
 United Kingdom  
 Office Tel: +44 (0) 1524 850506  
 Office Fax: +44 (0) 1524 850608

**Emergency Telephone Number** For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

**E-mail address** begel.sdsdesk@thermofisher.com

**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available

### SECTION 2. HAZARD IDENTIFICATION

**Physical State**  
Solid

**Appearance**  
Black

**Odor**  
Odorless

#### Emergency Overview

May cause cancer. Harmful to aquatic life. Very toxic to aquatic life with long lasting effects. Harmful if inhaled. Causes damage to organs through prolonged or repeated exposure.

#### Classification of the substance or mixture

Acute Inhalation Toxicity - Dusts and Mists	Category 4
Carcinogenicity	Category 1A
Specific target organ toxicity - (repeated exposure)	Category 1
Acute aquatic toxicity	Category 1 Category 3
Chronic aquatic toxicity	Category 1

#### Label Elements



**Signal Word****Danger****Hazard Statements**

H350 - May cause cancer

H410 - Very toxic to aquatic life with long lasting effects

H332 - Harmful if inhaled

H372 - Causes damage to organs through prolonged or repeated exposure

**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/fume/gas/mist/vapors/spray

P264 - Wash face, hands and any exposed 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

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

**Response**

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

P308 + P313 - IF exposed or concerned: Get medical advice/attention

**Storage**

P403 - Store in a well-ventilated place

**Disposal**

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

**Physical and Chemical Hazards**

None identified.

**Health Hazards**

May cause cancer. Harmful if inhaled. Causes damage to organs through prolonged or repeated exposure.

**Environmental hazards**

Harmful to aquatic life. Very toxic to aquatic life with long lasting effects. Is not likely mobile in the environment due its low water solubility. Spillage unlikely to penetrate soil.

**Other Hazards**

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

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS No	Weight %
Cadmium telluride (CdTe)	1306-25-8	>95

**Note**

Note 1: The concentration stated or, in the absence of such concentrations, the generic concentrations of this Regulation (Table 3.1) or the generic concentrations of Directive 1999/45/EC (Table 3.2), are the percentages by weight of the metallic element calculated with reference to the total weight of the mixture

**SECTION 4. FIRST AID MEASURES****General Advice**

If symptoms persist, call a physician.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

**Ingestion**

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

**Most important symptoms and effects**

None reasonably foreseeable.

**Self-Protection of the First Aider**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

**Notes to Physician**

Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES****Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Extinguishing media which must not be used for safety reasons**

No information available.

**Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****Personal Precautions**

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

**Environmental Precautions**

Should not be released into the environment. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage.

**Methods for Containment and Clean Up**

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

Refer to protective measures listed in Sections 8 and 13.

**SECTION 7. HANDLING AND STORAGE****Handling**

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

**Storage**

Keep container tightly closed in a dry and well-ventilated place.

**Specific Use(s)**

Use in laboratories

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

## Cadmium telluride

## Control Parameters

Component	China	Taiwan	Thailand	Hong Kong
Cadmium telluride (CdTe)	-	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>		-

Component	ACGIH TLV	OSHA PEL	NIOSH	The United Kingdom	European Union
Cadmium telluride (CdTe)	TWA: 0.01 mg/m <sup>3</sup> TWA: 0.002 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	(Vacated) TWA: 0.1 mg/m <sup>3</sup>	IDLH: 9 mg/m <sup>3</sup> IDLH: 25 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	STEL: 0.075 mg/m <sup>3</sup> 15 min TWA: 0.025 mg/m <sup>3</sup> 8 hr STEL: 0.3 mg/m <sup>3</sup> 15 min TWA: 0.1 mg/m <sup>3</sup> 8 hr	

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

## Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust MDHS10/2 Cadmium and inorganic compounds of cadmium in air Laboratory method using flame atomic absorption spectrometry or electrothermal atomic absorption spectrometry

## Exposure Controls

## Engineering Measures

Ensure adequate ventilation, especially in confined areas. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

## Personal protective equipment

**Eye Protection** Wear safety glasses with side shields (or goggles) (European standard - EN 166)

**Hand Protection** Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber	See manufacturers	-	EN 374	(minimum requirement)
Nitrile rubber	recommendations			
Neoprene				
PVC				

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

**Skin and body protection** Long sleeved clothing

**Respiratory Protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.  
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Large scale/emergency use** Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced  
**Recommended Filter type:** Particulates filter conforming to EN 143

**SAFETY DATA SHEET****Cadmium telluride****Small scale/Laboratory use**

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Recommended half mask:-** Particle filtering: EN149:2001  
When RPE is used a face piece Fit Test should be conducted**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**

Prevent product from entering drains.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	Black	
<b>Physical State</b>	Solid	
<b>Odor</b>	Odorless	
<b>Odor Threshold</b>	No data available	
<b>pH</b>	No information available	
<b>Melting Point/Range</b>	1041 °C / 1905.8 °F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	No information available	
<b>Flash Point</b>	No information available	<b>Method -</b> No information available
<b>Evaporation Rate</b>	Not applicable	Solid
<b>Flammability (solid,gas)</b>	No information available	
<b>Explosion Limits</b>	No data available	
<b>Vapor Pressure</b>	No data available	
<b>Vapor Density</b>	Not applicable	Solid
<b>Specific Gravity / Density</b>	No data available	
<b>Bulk Density</b>	No data available	
<b>Water Solubility</b>	Insoluble	
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Autoignition Temperature</b>	No data available	
<b>Decomposition Temperature</b>	No data available	
<b>Viscosity</b>	Not applicable	Solid
<b>Explosive Properties</b>	No information available	
<b>Oxidizing Properties</b>	No information available	
<b>Molecular Formula</b>	Cd Te	
<b>Molecular Weight</b>	240.01	

**SECTION 10. STABILITY AND REACTIVITY**

<b>Stability</b>	Stable under recommended storage conditions.
<b>Hazardous Reactions</b>	None under normal processing.
<b>Hazardous Polymerization</b>	No information available.
<b>Conditions to Avoid</b>	Incompatible products.
<b>Materials to avoid</b>	Strong oxidizing agents. Strong acids.

**Hazardous Decomposition Products** Cadmium oxide.**SECTION 11. TOXICOLOGICAL INFORMATION****Product Information**

**SAFETY DATA SHEET****Cadmium telluride****(a) acute toxicity;**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cadmium telluride (CdTe)			LC50 = 2.53 mg/L ( Rat ) 4 h LC50 = 2.87 mg/L ( Rat ) 4 h

**(b) skin corrosion/irritation;** No data available**(c) serious eye damage/irritation;** No data available**(d) respiratory or skin sensitization;**

**Respiratory** No data available  
**Skin** No data available

**(e) germ cell mutagenicity;** No data available**(f) carcinogenicity;** No data available

There are no known carcinogenic chemicals in this product

**(g) reproductive toxicity;** No data available**(h) STOT-single exposure;** No data available**(i) STOT-repeated exposure;** Category 1**Target Organs** Blood, Respiratory system, Kidney, Prostate, Lungs.**(j) aspiration hazard;** Not applicable  
Solid**Symptoms / effects, both acute and delayed** No information available**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity effects**

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Cadmium telluride (CdTe)	LC50: > 1 g/L, 96h flow-through (Danio rerio)			

**Persistence and Degradability**

**Persistence**  
**Degradability**  
**Degradation in sewage treatment plant**

Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary  
 Insoluble in water, May persist.  
 Not relevant for inorganic substances.  
 Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

<b>Bioaccumulative Potential</b>	May have some potential to bioaccumulate; Product has a high potential to bioconcentrate
<b>Mobility in soil</b>	Spillage unlikely to penetrate soil Is not likely mobile in the environment due its low water solubility
<b>Endocrine Disruptor Information</b>	This product does not contain any known or suspected endocrine disruptors
<b>Persistent Organic Pollutant</b>	This product does not contain any known or suspected substance
<b>Ozone Depletion Potential</b>	This product does not contain any known or suspected substance

**SECTION 13. DISPOSAL CONSIDERATIONS**

<b>Waste from Residues/Unused Products</b>	Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.
<b>Contaminated Packaging</b>	Dispose of this container to hazardous or special waste collection point.
<b>Other Information</b>	Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this chemical enter the environment.

**SECTION 14. TRANSPORT INFORMATION**

**Road and Rail Transport** Not Regulated

**IMDG/IMO** Not regulated

**IATA** Not regulated

**Special Precautions for User** No special precautions required

**SECTION 15. REGULATORY INFORMATION****International Inventories**

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012	TCSI	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL
Cadmium telluride (CdTe)	X	X	X	X	215-149-9	X	X	-	-	X	-	KE-05-0301

**Note**

Note 1: The concentration stated or, in the absence of such concentrations, the generic concentrations of this Regulation (Table 3.1) or the generic concentrations of Directive 1999/45/EC (Table 3.2), are the percentages by weight of the metallic element calculated with reference to the total weight of the mixture

**National Regulations**

## SECTION 16. OTHER INFORMATION

**Prepared By** Health, Safety and Environmental Department  
**Creation Date** 29-Jun-2015  
**Revision Date** 22-Apr-2024  
**Revision Summary** New emergency telephone response service provider.

**Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

**Legend**

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**PNEC** - Predicted No Effect Concentration

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (Volatile Organic Compound)

**Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**