

ALFAA12373

Cadmium chloride hemipentahydrate

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

产品说明:
Product Description: 2.5水合氯化镉
 Cadmium chloride hemipentahydrate

Cat No. : 12373
Synonyms Cadmium dichloride, hydrate (2:5).
CAS No 7790-78-5
Molecular Formula CdCl₂. 2.5 H₂O

Supplier Avocado Research Chemicals Ltd.
 (Part of Thermo Fisher Scientific)
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 Lancashire, LA3 2XY,
 United Kingdom
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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
Crystalline Solid

Appearance
White

Odor
Odorless

Emergency Overview

Toxic if swallowed. Fatal if inhaled. May cause genetic defects. May cause cancer. May damage fertility or the unborn child.
 Causes damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

Classification of the substance or mixture

| | |
|--|-------------|
| Acute Oral Toxicity | Category 3 |
| Acute Inhalation Toxicity - Dusts and Mists | Category 2 |
| Germ Cell Mutagenicity | Category 1B |
| Carcinogenicity | Category 1B |
| Reproductive Toxicity | Category 1B |
| Specific target organ toxicity - (repeated exposure) | Category 1 |
| Acute aquatic toxicity | Category 1 |
| Chronic aquatic toxicity | Category 1 |

Label Elements

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

H301 - Toxic if swallowed
H330 - Fatal if inhaled
H340 - May cause genetic defects
H350 - May cause cancer
H372 - Causes damage to organs through prolonged or repeated exposure
H410 - Very toxic to aquatic life with long lasting effects
H360 - May damage fertility or the unborn child

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
P284 - Wear respiratory protection
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
P310 - Immediately call a POISON CENTER or doctor
P330 - Rinse mouth

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

Disposal

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

Physical and Chemical Hazards

None identified.

Health Hazards

Toxic if swallowed. Fatal if inhaled. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.

Environmental hazards

Very toxic to aquatic life with long lasting effects. Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

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

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS No | Weight % |
|---------------------------------|-----------|----------|
| Cadmium chloride, hydrate (2:5) | 7790-78-5 | 100 |

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

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General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion

Do NOT induce vomiting. Call a physician or poison control center immediately.

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

Non-combustible. Do not allow run-off from fire-fighting to enter drains or water courses.

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

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

Environmental Precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.

Methods for Containment and Clean Up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

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Refer to protective measures listed in Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

Handling

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Avoid dust formation. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.

Storage

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat, sparks and flame. Protect from direct sunlight. Keep under nitrogen.

Specific Use(s)

Use in laboratories

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

| Component | China | Taiwan | Thailand | Hong Kong |
|---------------------------------|-------|-----------------------------|----------|-----------|
| Cadmium chloride, hydrate (2:5) | - | TWA: 0.05 mg/m ³ | | - |

| Component | ACGIH TLV | OSHA PEL | NIOSH | The United Kingdom | European Union |
|---------------------------------|---|----------|---------------------------|---|----------------|
| Cadmium chloride, hydrate (2:5) | TWA: 0.01 mg/m ³ TWA: 0.002 mg/m ³ | | IDLH: 9 mg/m ³ | STEL: 0.075 mg/m ³ 15 min TWA: 0.025 mg/m ³ 8 hr | |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
 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)

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Ensure gloves are suitable for the task: Chemical compatability, 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 |
| 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. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained. |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|--|---|--|
| Appearance | White | |
| Physical State | Crystalline Solid | |
| Odor | Odorless | |
| Odor Threshold | No data available | |
| pH | No information available | |
| Melting Point/Range | 568 °C / 1054.4 °F | |
| Softening Point | No data available | |
| Boiling Point/Range | No information available 960 °C / 1760 °F | |
| Flash Point | Not applicable | Method - No information available |
| Evaporation Rate | Not applicable | Solid |
| Flammability (solid,gas) | No information available | |
| Explosion Limits | No data available | |
| Vapor Pressure | 10 mmHg @ 656 °C | |
| Vapor Density | Not applicable | Solid |
| Specific Gravity / Density | No data available | |
| Bulk Density | No data available | |
| Water Solubility | Soluble in water | |
| Solubility in other solvents | No information available | |
| Partition Coefficient (n-octanol/water) | | |
| Autoignition Temperature | No data available | |
| Decomposition Temperature | No data available | |
| Viscosity | Not applicable | Solid |
| Explosive Properties | No information available | |
| Oxidizing Properties | No information available | |
| Molecular Formula | CdCl ₂ . 2.5 H ₂ O | |
| Molecular Weight | 228.34 | |

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SECTION 10. STABILITY AND REACTIVITY

| | |
|---------------------------------|--|
| Stability | Stable under recommended storage conditions. |
| Hazardous Reactions | None under normal processing. |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Conditions to Avoid | Avoid dust formation. Incompatible products. Exposure to moist air or water. |
| Materials to avoid | Aluminium. . Oxidizing agent. |

Hazardous Decomposition Products Fumes. Toxic fumes. Cadmium oxide. Hydrogen chloride.

SECTION 11. TOXICOLOGICAL INFORMATION

Product Information

(a) acute toxicity;

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------------------------|--------------------------|-------------|-----------------|
| Cadmium chloride, hydrate (2:5) | LD50 = 665 mg/kg (Rat) | | |

(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;

Category 1B
Animal experiments showed mutagenic and teratogenic effects

(f) carcinogenicity;

Category 1B
Possible cancer hazard. May cause cancer based on animal data

(g) reproductive toxicity; Teratogenicity

Category 1B
Teratogenic effects have occurred in experimental animals.

(h) STOT-single exposure;

No data available

(i) STOT-repeated exposure;

Category 1
Target Organs Lungs, Kidney.

(j) aspiration hazard;

Not applicable
Solid

Symptoms / effects, both acute and delayed No information available

SECTION 12. ECOLOGICAL INFORMATION

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Ecotoxicity effects

Very toxic 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 chloride, hydrate (2:5) | | | | EC50 = 17 mg/L 15 min EC50 = 5.4 mg/L 30 min EC50 = 98 mg/L 5 min |

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
May persist, based on information available.
Not relevant for inorganic substances.
Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative Potential

May have some potential to bioaccumulate

Mobility in soil

The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility Highly mobile in soils

Endocrine Disruptor Information
Persistent Organic Pollutant
Ozone Depletion Potential

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

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from Residues/Unused Products

Should not be released into the environment. 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.

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

Other Information

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

UN-No
Proper Shipping Name
Technical Shipping Name
Hazard Class
Packing Group

UN2570
CADMIUM COMPOUND
Cadmium chloride
6.1
I

IMDG/IMO

UN-No
Proper Shipping Name
Technical Shipping Name
Hazard Class
Packing Group

UN2570
CADMIUM COMPOUND
Cadmium chloride
6.1
I

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IATA

UN-No UN2570
Proper Shipping Name CADMIUM COMPOUND
Technical Shipping Name Cadmium chloride
Hazard Class 6.1
Packing Group I

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 chloride, hydrate (2:5) | - | X | X | - | - | - | - | X | - | | X | - |

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 09-Dec-2010
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.

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

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

Chemical incident response training.

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/NDSL - 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

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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