

## Chemical Safety Data Sheet MSDS / SDS

## CADMIUM NITRATE TETRAHYDRATE

Revision Date:2023-12-07 Revision Number:1

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

## Product identifier

Product name : CADMIUM NITRATE TETRAHYDRATE  
CBnumber : CB1765634  
CAS : 10022-68-1  
EINECS Number : 638-751-7  
Synonyms : cadmium nitrate tetrahydrate,CADMIUM NITRATE, 4-HYDRATE

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P201 Obtain special instructions before use.  
P221 Take any precaution to avoid mixing with combustibles/...  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P308+P313 IF exposed or concerned: Get medical advice/attention.  
P405 Store locked up.

## Hazard statements

H410 Very toxic to aquatic life with long lasting effects  
H400 Very toxic to aquatic life  
H372 Causes damage to organs through prolonged or repeated exposure

H350 May cause cancer  
H340 May cause genetic defects  
H332 Harmful if inhaled  
H330 Fatal if inhaled  
H312 Harmful in contact with skin  
H301 Toxic if swallowed  
H272 May intensify fire; oxidizer

---

## SECTION 3: Composition/information on ingredients

### Substance

|              |   |
|--------------|---|
| Product name | : CADMIUM NITRATE TETRAHYDRATE                            |
| Synonyms     | : cadmium nitrate tetrahydrate,CADMIUM NITRATE, 4-HYDRATE |
| CAS          | : 10022-68-1  |
| EC number    | : 638-751-7   |
| MF           | : CdH8N2O10   |
| MW           | : 308.48  |

---

## SECTION 4: First aid measures

### Description of first aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

### 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

### Indication of any immediate medical attention and special treatment needed

No data available

---

## SECTION 5: Firefighting measures

## Extinguishing media

### Suitable extinguishing media

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

### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

## Special hazards arising from the substance or mixture

Nitrogen oxides (NO<sub>x</sub>) Cadmium/cadmium oxides Not combustible.

Ambient fire may liberate hazardous vapours.

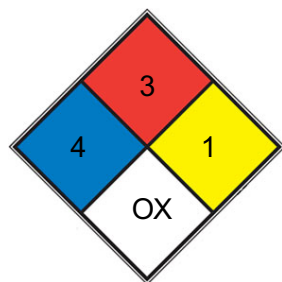
## Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

## Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

## NFPA 704



|   |               |    |   |
|---|---------------|----|---|
| ■ | HEALTH        | 4  | Very short exposure could cause death or major residual injury (e.g. hydrogen cyanide, phosgene, methyl isocyanate, <a href="#">hydrofluoric acid</a> )   |
| ■ | FIRE          | 3  | Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions . Liquids having a flash point below 22.8 °C (73 °F) and having a boiling point at or above 37.8 °C (100 °F) or having a flash point between 22.8 and 37.8 °C (73 and 100 °F). (e.g. gasoline, <a href="#">acetone</a> ) |
| ■ | REACT         | 1  | Normally stable, but can become unstable at elevated temperatures and pressures (e.g. <a href="#">propene</a> )   |
| □ | SPEC.<br>HAZ. | OX |   |

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

## Environmental precautions

Do not let product enter drains.

## Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

## Reference to other sections

For disposal see section 13.

---

# SECTION 7: Handling and storage

## Precautions for safe handling

### Advice on safe handling

Work under hood. Do not inhale substance/mixture.

### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

## Conditions for safe storage, including any incompatibilities

### Storage conditions

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

hygroscopic

### Specific end use(s)

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

---

# SECTION 8: Exposure controls/personal protection

## control parameter

### Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

## Exposure controls

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

#### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving

in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatrill? L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatrill? L

### Body Protection

protective clothing

### Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type P3

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

### Control of environmental exposure

Do not let product enter drains.

---

## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

|  |                                     |
|--|-------------------------------------|
| Appearance                                   | white solid                         |
| Odour  | weakly of nitric acid               |
| Odour Threshold                              | No data available                   |
| pH   | No data available                   |
| Melting point/freezing point                 | Melting point/range: 59,5 °C - lit. |
| Initial boiling point and boiling range      | 132 °C                              |
| Flash point                                  | does not flash                      |
| Evaporation rate                             | No data available                   |
| Flammability (solid, gas)                    | The product is not flammable.       |
| Upper/lower flammability or explosive limits | No data available                   |
| Vapour pressure                              | No data available                   |
| Vapour density                               | No data available                   |
| Relative density                             | 2.45                                |

|  |   |
|--|---|
| Water solubility                       | No data available   |
| Partition coefficient: n-octanol/water | No data available   |
| Autoignition temperature               | No data available   |
| Decomposition temperature              | No data available   |
| Viscosity                              | Viscosity, kinematic: No data available Viscosity, dynamic: No data available |
| Explosive properties                   | No data available   |
| Oxidizing properties                   | The substance or mixture is not classified as oxidizing.                      |

### Other safety information

No data available

## SECTION 10: Stability and reactivity

### Reactivity

No data available

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

Violent reactions possible with:

combustible substances

### Conditions to avoid

no information available

### Incompatible materials

Strong oxidizing agents

### Hazardous decomposition products

In the event of fire: see section 5

## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

Acute toxicity estimate Oral - Not tested on animals - 100,1 mg/kg

(Expert judgment)

Acute toxicity estimate Inhalation - Not tested on animals - 0,051 mg/l (Expert judgment)

Acute toxicity estimate Dermal - Not tested on animals - 1.100,1 mg/kg (Expert judgment)

#### Skin corrosion/irritation

No data available

**Serious eye damage/eye irritation**

No data available

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Cadmium chloride Test Type: comet assay

Test system: mammalian cells Result: positive

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: cadmium sulphate Test Type: In vitro mammalian cell gene mutation test

Test system: mammalian cells Result: positive

Remarks: (in analogy to similar products)

**Carcinogenicity**

No data available

**Reproductive toxicity**

May damage the unborn child. May damage fertility.

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

Causes damage to organs through prolonged or repeated exposure. - Kidney, Bone Causes damage to organs through prolonged or repeated exposure. - Bone, Kidney

**Aspiration hazard**

No data available

---

## SECTION 12: Ecological information

**Toxicity****Toxicity to fish**

LC50 - Pimephales promelas (fathead minnow) - 0,0132 mg/l - 96 h Remarks: (ECOTOX Database)

(referred to the cation)

**Toxicity to daphnia and other aquatic invertebrates**

LC50 - Daphnia magna (Water flea) - 0,023 mg/l - 48 h Remarks: (referred to the cation)

(ECOTOX Database)

**Persistence and degradability**

The methods for determining the biological degradability are not applicable to inorganic substances.

**Bioaccumulative potential**

The product may be accumulated in organisms.

## Mobility in soil

No data available

## Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## Other adverse effects

Hazard for drinking water supplies.

Discharge into the environment must be avoided.

---

# SECTION 13: Disposal considerations

## Waste treatment methods

## Product

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

---

# SECTION 14: Transport information

## UN number

ADR/RID: 2570 IMDG: 2570 IATA: 2570

## UN proper shipping name

ADR/RID: CADMIUM COMPOUND (Cadmium nitrate tetrahydrate) IMDG: CADMIUM COMPOUND (Cadmium nitrate tetrahydrate) IATA:  
Cadmium compound (Cadmium nitrate tetrahydrate)

## Transport hazard class(es)

ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1

## Packaging group

ADR/RID: II IMDG: II IATA: II

## Environmental hazards

ADR/RID: yes IMDG Marine pollutant: yes IATA: no

## Special precautions for user

No data available

---

# SECTION 15: Regulatory information

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

## Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Not Listed. website: <https://www.mem.gov.cn/>

## Measures for Environmental Management of New Chemical Substances

European Inventory of Existing Commercial Chemical Substances (EINECS):Not Listed. website: <https://echa.europa.eu/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: <https://emb.gov.ph/>

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

Korea Existing Chemicals List (KECL):Not Listed. website: <http://ncis.nier.go.kr>

EC Inventory:Not Listed.

Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>

United States Toxic Substances Control Act (TSCA) Inventory:Not Listed. website: <https://www.epa.gov/>

---

## SECTION 16: Other information

### 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

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

### References

【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

【4】 eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:

[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.