



## CADMIUM NITRATE

### 1. Product Identification

Synonyms: Cadmium (II) nitrate, tetrahydrate (1:2:4); nitric acid, cadmium salt, tetrahydrate; Cadmium Nitrate, 4-Hydrate; Cadmium dinitrate, 4-hydrate

CAS No.: 10325-94-7 (Anhydrous); 10022-68-1 (Tetrahydrate)

Molecular Weight: 308.48

Chemical Formula:  $Cd(NO_3)_2 \cdot 4H_2O$

Product Codes: 30554

### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Cadmium Nitrate	10325-94-7	99 - 100%

### 3. Hazards Identification

Potential Health Effects

**Inhalation:** Cadmium absorption is most efficient via respiratory tract. Inhalation of dust may produce irritation, headache, metallic taste and/or cough. Severe exposures may produce shortness of breath, chest pain, and flu-like symptoms with weakness, fever, headache, chills, sweating, nausea and muscular pain.

**Ingestion:** Toxic. Ingested cadmium salts may cause severe and sometimes fatal poisonings. Symptoms can include severe nausea, vomiting, diarrhea, abdominal pains, choking, dizziness, and salivation. Kidney and liver dysfunction may occur.

**Skin Contact:** Causes irritation to skin. Symptoms include redness, itching, and pain.

**Eye Contact:** Causes irritation, redness, and pain.

**Chronic Exposure:** Chronic exposure to cadmium, even at relatively low concentrations, may result in kidney damage, anemia, pulmonary fibrosis, emphysema, perforation of the nasal septum, loss of smell, male reproductive effects, and an increased risk of cancer of the lung and of the prostate.

**Pre-existing Conditions:** Persons with pre-existing skin disorders, eye problems, blood disorders, prostate problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance.

### 4. First Aid Measures

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Ingestion:** Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Skin Contact:** Wipe off excess material from skin then immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:** Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.



Registered Off. : 101-A, Deep Enclave, Pocket 'D', Ashok Vihar, Phase-III, Delhi-110 052 (India)  
Corporate Off. : 152, Vardhman City Centre, Near Shakti Nagar Underbridge, Delhi-110052 (India)  
Works : Plot No.1022, Modern Industrial Estate, Bahadurgarh-124507, Haryana (India)  
Telephone : 0091 - 11 - 23646422 E-mail : tecpharm@gmail.com  
Website : www.technopharmchem.com

## 5. Fire Fighting Measures

**Fire:** This material is a noncombustible solid, but the dust can be a moderate fire hazard when exposed to heat or flame, or when reacted with oxidizing agents, hydrogen azide, zinc, selenium, or tellurium.

Substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

**Explosion:** Strong oxidants may explode when shocked, or if exposed to heat, flame, or friction. Also may act as initiation source for dust or vapor explosions. Sensitive to mechanical impact.

**Fire Extinguishing Media:** Water spray, dry chemical, alcohol foam, or carbon dioxide.

**Special Information:** In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. If involved in a fire, this material can emit very toxic fumes of cadmium.

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## 6. Accidental Release Measures

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. Do not flush to the sewer. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

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## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Separate from combustibles, organic or other readily oxidizable materials. Avoid storage on wood floors. Wear special protective equipment (Sec. 8) for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas.

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## 8. Exposure Controls/Personal Protection

**Ventilation System:** A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

**Personal Respirators (NIOSH Approved):** If the exposure limit is exceeded and engineering controls are not feasible, a half-face high efficiency particulate respirator (NIOSH type N100 filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece high efficiency particulate respirator (NIOSH type N100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.

**Skin Protection:** Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:** Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

**Appearance:** White crystals.

**Odor:** Odorless.

**Solubility:** 1 g /0.6 cc in water

**Density:** 2.455

**pH:** No information found.



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% Volatiles by volume @ 21C (70F): 0  
Boiling Point: 132C (270F) Melting Point: 59.5C (140F)  
Vapor Density (Air=1): No information found.  
Vapor Pressure (mm Hg): No information found.  
Evaporation Rate (BuAc=1): No information found.

#### 10. Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage.  
Hazardous Decomposition Products: Oxides of nitrogen, Oxides of nitrogen and toxic metal fumes may form when heated to decomposition.  
Hazardous Polymerization: Will not occur.  
Incompatibilities: Reducing agents, hydrides, halogens, combustible material, zinc, selenium, tellurium and hydrogen azide.  
Conditions to Avoid: Heat, dusting, contact with combustibles and incompatibles.

#### 11. Toxicological Information

Toxicological Data:  
Anhydrous: Oral rat LD50: 300 mg/kg. Investigated as a tumorigen, mutagen, reproductive effector.  
Hydrate: Oral rat LD50: 300 mg/kg. Investigated as a tumorigen and mutagen.  
Reproductive Toxicity:  
Other cadmium compounds are related to teratogenic and reproductive system effects.

#### 12. Ecological Information

Environmental Fate: This material has an experimentally-determined bioconcentration factor (BCF) of greater than 100. This material is expected to significantly bioaccumulate.  
Environmental Toxicity: This material is expected to be very toxic to aquatic life.

#### 13. Disposal Considerations

Dispose of container and unused contents in accordance with federal, state and local requirements.

#### 14. Transport Information

Land

Proper Shipping Name: CADMIUM NITRATE  
Hazard Class: 5.1, 6.1  
UN/NA: UN3087  
Packing Group: II  
Information reported for product/size: 125G  
International (Water, I.M.O.)

Proper Shipping Name: CADMIUM NITRATE, 4-HYDRATE  
Hazard Class: 5.1, 6.1  
UN/NA: UN3087  
Packing Group: II  
Information reported for product/size: 125G

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#### 15. Regulatory Information

SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No

Reactivity: No (Pure / Solid)

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#### 16. Other Information

Product Use:

Laboratory Reagent.