

# CADMIUM ACETATE DIHYDRATE

GHS Safety Data Sheet

Version No:2.0

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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

CADMIUM ACETATE

### OTHER NAMES

$\text{Cd}(\text{CH}_3\text{COO})_2 \cdot 2\text{H}_2\text{O}$ , "acetic acid, cadmium salt", bis(acetoxy)cadmium, "cadmium diacetate",

### PROPER SHIPPING NAME

CADMIUM COMPOUND

### PRODUCT USE

Laboratory reagent for sulfur, selenium and tellurium;  
electroplating; ceramics, dyeing.

### SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

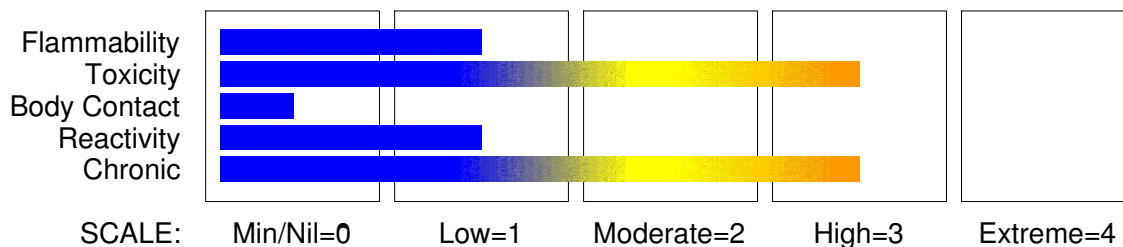
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

### HAZARD RATINGS



## Section 2 - HAZARDS IDENTIFICATION

GHS Classification

continued...

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## Section 2 - HAZARDS IDENTIFICATION

Acute Toxicity (Dermal) Category 4  
Acute Toxicity (Inhalation) Category 4  
Acute Toxicity (Oral) Category 4  
Carcinogen Category 1B  
Chronic Aquatic Hazard Category 1



## EMERGENCY OVERVIEW

### HAZARD

DANGER

Determined by using GHS criteria:

H332 H312 H302 H350 H410

Harmful if inhaled

Harmful in contact with skin

Harmful if swallowed

May cause CANCER

Very toxic to aquatic life with long lasting effects

Harmful to life in the soil

### PRECAUTIONARY STATEMENTS

#### Prevention

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

Use only outdoors or in a well ventilated area.

Wear protective gloves/clothing

Use personal protective equipment as required.

Do not handle until all safety precautions have been read and understood.

Obtain special instructions before use.

Wash hands thoroughly after handling.

Do not eat, drink or smoke when using this product.

#### Response

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

If exposed or concerned: Get medical attention advice.

Wash contaminated clothing before reuse.

Specific treatment: refer to Label or MSDS.

Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN: Gently wash with plenty of soap and water.

#### Storage

Store locked up.

#### Disposal

Dispose of contents and container in accordance with relevant legislation.

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## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

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| NAME            | CAS RN   | %   |
|-----------------|----------|-----|
| cadmium acetate | 543-90-8 | >99 |

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## Section 4 - FIRST AID MEASURES

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### SWALLOWED

For advice, contact a Poisons Information Centre or a doctor.

- IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.
- For advice, contact a Poisons Information Centre or a doctor.

Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

- Induce vomiting with fingers down the back of the of the throat, ONLY IF CONSCIOUS.
- Lean patient forward or place on left side (head-down position if possible) to maintain open airway and prevent aspiration.

NOTE: Wear a protective glove when inducing vomiting by mechanical means.

- In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
- If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided. Further action will be the responsibility of the medical specialist.
- If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS.

### EYE

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- If pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

### SKIN

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

### INHALED

- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear passage of breathing.
- If irritation or discomfort persists seek medical attention.

### NOTES TO PHYSICIAN

- High acute exposure, to cadmium, produces delayed pulmonary oedema progressing to interstitial fibrosis.
- For acute inhalations, initial presentation simulates metal fume fever (fever, headache, dyspnoea, pleuritic chest pain, conjunctivitis, rhinitis, sore throat, cough) developing 4-12 hours post-exposure. Respiratory failure may ensue in 3-10 days.
- For acute oral exposures, gastroenteritis results with sudden onset of vomiting,

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## Section 4 - FIRST AID MEASURES

diarrhoea and abdominal pain.

- If vomiting is not prominent, use Ipecac/lavage/catharsis in usual manner.
- CaNa<sub>2</sub>EDTA is the chelator of choice for acute cadmium exposure. British Anti-Lewisite increases nephrotoxicity and therefore is not indicated

[Ellenhorn and Barceloux: Medical Toxicology]

COMMENTS on HUMAN TOXICITY:

- Between 10 and 50% of inhaled cadmium is adsorbed, the adsorption being greater for smaller particles and fumes; absorption through skin is negligible.

- The half-life of cadmium in the human body is thought to be about around 30 years and it has no known biological function.

Blood and urine cadmium concentrations may be determined.

Normal concentrations

Blood <27 nmol/l (<3ug/l), non- smokers <54

nmol/l (<6 ug/l), smokers

Urine <18 nmol/l (<2 ug/l), non- smokers 0.4-

1.3 nmol/mmol creatinine <45 nmol/l (<5 ug/l),

smokers 10- 35 nmol/mmol creatinine

Hazardous concentrations

>180 nmol/l (>20 ug/l)

>180 nmol/l (>20 ug/l) >4- 13 nmol/mmol creatinine

BIOLOGICAL EXPOSURE INDEX (BEI)

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

| Determinant      | Sampling time | Index             | Comments |
|------------------|---------------|-------------------|----------|
| Cadmium in urine | Not critical  | 5 ug/g creatinine | B        |
| Cadmium in blood | Not critical  | 5 ug/L            | B        |

B: Background levels occur in specimens collected from subjects NOT exposed.

## Section 5 - FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

### FIRE/EXPLOSION HAZARD

- Solid which exhibits difficult combustion or is difficult to ignite.

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## Section 5 - FIRE FIGHTING MEASURES

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- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
- Dry dust can also be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.
- Build-up of electrostatic charge may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.
- All movable parts coming in contact with this material should have a speed of less than 1-metre/sec.

### FIRE INCOMPATIBILITY

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

### Personal Protective Equipment

- Breathing apparatus.
- Gas tight chemical resistant suit.
- Limit exposure duration to 1 BA set 30 mins.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### EMERGENCY PROCEDURES

#### MINOR SPILLS

- Clean up waste regularly and abnormal spills immediately.
- Avoid breathing dust and contact with skin and eyes.
- Wear protective clothing, gloves, safety glasses and dust respirator.
- Use dry clean up procedures and avoid generating dust.
- Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).
- Dampen with water to prevent dusting before sweeping.
- Place in suitable containers for disposal.

#### MAJOR SPILLS

- Pollutant.
- Moderate hazard.
- CAUTION: Advise personnel in area.
- Alert Emergency Services and tell them location and nature of hazard.
- Control personal contact by wearing protective clothing.
- Prevent, by any means available, spillage from entering drains or water courses.
- Recover product wherever possible.
- IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. IF WET: Vacuum/shovel up and place in labelled containers for disposal.
- ALWAYS: Wash area down with large amounts of water and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise Emergency Services.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

### EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

cadmium acetate 7.5 mg/m<sup>3</sup>

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

cadmium acetate 4 mg/m<sup>3</sup>

other than mild, transient adverse effects without perceiving a clearly defined odour is:

cadmium acetate 0.03 mg/m<sup>3</sup>

The threshold concentration below which most people will experience no appreciable risk of health effects:

cadmium acetate 0.005 mg/m<sup>3</sup>

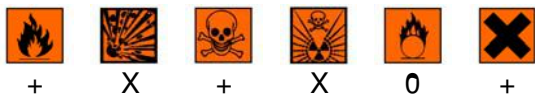
American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

|                 |          |               |         |
|-----------------|----------|---------------|---------|
| Very Toxic (T+) | >= 0.1%  | Toxic (T)     | >= 3.0% |
| R50             | >= 0.25% | Corrosive (C) | >= 5.0% |
| R51             | >= 2.5%  |               |         |
| else            | >= 10%   |               |         |

where percentage is percentage of ingredient found in the mixture

### SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+: May be stored together

O: May be stored together with specific precautions

X: Must not be stored together

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- DO NOT allow material to contact humans, exposed food or food utensils.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.

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## Section 7 - HANDLING AND STORAGE

- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately. Launder contaminated clothing before re-use.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

### SUITABLE CONTAINER

- Packaging as recommended by manufacturer.
- Check that containers are clearly labelled.
- Glass container.
- Plastic drum.
- Polyethylene or polypropylene container.
- Metal can.
- Metal drum.

### STORAGE INCOMPATIBILITY

- Avoid reaction with oxidising agents.
- Avoid strong acids.

### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

The following materials had no OELs on our records

- cadmium acetate:

CAS:89759- 80- 8 CAS:543- 90- 8 CAS:5743- 04- 4  
CAS:24558- 49- 4 CAS:29398- 76- 3 CAS:245727-  
62- 2

### MATERIAL DATA

The adopted TLVs were recommended to prevent proteinuria, pulmonary oedema and emphysema. Evidence for added risk of carcinoma of the lung and prostate has been reported amongst smelter workers but exposure to other toxic fumes, gases and dusts is a confounding factor. Most of the data on cadmium levels responsible for these observed effects indicated exposures above the former TLV ceiling of 0.1 mg/m<sup>3</sup> for cadmium fume. It is anticipated that the total dust recommendation will prevent the development of preclinical kidney dysfunction and that the respirable fraction recommendation will protect the lower respiratory tract from the accumulation of cadmium burden that might directly act on the lung as a carcinogen. It is also expected that the recommendations will protect workers from metal fume fever. The concentration of respirable dust for application of this limit is to be determined from the fraction that penetrates a separator whose size collection efficiency is described by a cumulative log normal function with a median aerodynamic volume of 4.0 µm (+-) 0.3 µm and with a geometric

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

standard deviation of  $1.5 \mu\text{m}$  (+-)  $0.1 \mu\text{m}$ , i.e. less than  $5 \mu\text{m}$ . Some jurisdictions require that health surveillance be conducted on occupationally exposed workers.

Such surveillance should emphasise

- demography, occupational and medical history
- health advice, including counselling on additional cadmium burden from smoking
- physical examination with emphasis on the respiratory system
- completion of a standardised respiratory questionnaire
- standardised respiratory function tests such as FEV1, FVC and FEV1/FVC
- urinary cadmium and beta2-microglobulin
- records of personal exposure.

### PERSONAL PROTECTION



#### EYE

- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

#### HANDS/FEET

- Plastic gloves.
- PVC gloves.
- Rubber gloves.
- Safety footwear.
- Rubber boots.

#### OTHER

- Overalls.
- Barrier cream
- Eyewash unit.

#### RESPIRATOR

| Protection Factor | Half- Face Respirator | Full- Face Respirator | Powered Air Respirator |
|-------------------|-----------------------|-----------------------|------------------------|
| 10 x ES           | P1 Air- line*         | - -                   | PAPR- P1 -             |
| 50 x ES           | Air- line**           | P2                    | PAPR- P2               |
| 100 x ES          | -                     | P3                    | -                      |
|                   |                       | Air- line*            | -                      |
| 100+ x ES         | -                     | Air- line**           | PAPR- P3               |

\* - Negative pressure demand \*\* - Continuous flow.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.  
For further information consult your Occupational Health and Safety Advisor.

### ENGINEERING CONTROLS

If risk of overexposure exists, wear approved self contained breathing apparatus (SCBA).  
Correct fit is essential to obtain adequate protection.

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## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

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### APPEARANCE

Colourless crystals, soluble in water. Slight acetic acid odour.  
Soluble in alcohol. Pure reagent form is dihydrate CAS RN [5743-04-4].  
Cadmium has a Bioconcentration Factor of 3000.

### PHYSICAL PROPERTIES

Solid.  
Mixes with water.

Molecular Weight: 230.49  
Melting Range (°C): 256  
Solubility in water (g/L): Miscible  
pH (1% solution): 7.1 (0.2M)  
Volatile Component (%vol): Not applicable.  
Relative Vapour Density (air=1): Not applicable.  
Lower Explosive Limit (%): Not applicable  
Autoignition Temp (°C): Not applicable  
State: Divided solid

Boiling Range (°C): Not available.  
Specific Gravity (water=1): 2.341  
pH (as supplied): Not applicable  
Vapour Pressure (kPa): Not applicable  
Evaporation Rate: Not applicable  
Flash Point (°C): Not applicable  
Upper Explosive Limit (%): Not applicable  
Decomposition Temp (°C): Not available

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## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

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### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

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## Section 11 - TOXICOLOGICAL INFORMATION

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### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

#### SWALLOWED

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health

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## Section 11 - TOXICOLOGICAL INFORMATION

of the individual.

Ingestion of cadmium salts produces prompt vomiting and are not retained. For this reason exposure by this route tends to be less harmful than exposure by inhalation. Although as little as 10-20 mg of soluble cadmium has produced severe toxic syndrome following ingestion, lethal doses probably comprise several hundred milligram by the oral route. Ingestion may cause excessive salivation, nausea, persistent vomiting, diarrhoea and abdominal pain.

### EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

### SKIN

Skin contact with the material may be harmful; systemic effects may result following absorption.

The material is not thought to be a skin irritant (i.e. is unlikely to produce irritant dermatitis as described in EC Directives using animal models). Temporary discomfort, however, may result from prolonged dermal exposures. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

Open cuts, abraded or irritated skin should not be exposed to this material.

Toxic effects may result from skin absorption.

### INHALED

The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation, of the material, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress. Reactions may not occur on exposure but response may be delayed with symptoms only appearing many hours later.

BE AWARE: Repeated minor exposures with only mild symptoms may have a serious cumulative poisoning effect.

Cadmium is absorbed more efficiently from the respiratory tract than from the gastrointestinal tract. Three clinical stages are recognised in dog. An acute pulmonary oedema (within 24 hours), proliferative interstitial pneumonitis (3rd-10th day) and permanent lung damage (consisting of perivascular and peribronchial fibrosis) have been identified - a similar sequence (though not permanent damage) is inferred from human autopsy material. The inhalation of 40 mg of cadmium with pulmonary retention of 4 mg is estimated to be fatal in man. Following absorption, organs accumulate low molecular weight proteins (metallothioneins - MTNs) which avidly bind metals such as cadmium, zinc and mercury. Single intravenous doses of cadmium-MTN complex produce necrosis and sloughing of renal tubular cells in rabbits. Renal (kidney) injury is also common amongst workers in cadmium industries exposed both acutely and chronically. Acute massive exposures may result in acute renal necrosis whereas prolonged low level exposures commonly produce renal tubular dysfunction characterised by low grade proteinuria (protein in the urine).

### CHRONIC HEALTH EFFECTS

On the basis, primarily, of animal experiments, the material may be regarded as carcinogenic to humans. At least one classification body considers that there is sufficient evidence to provide a strong presumption that human exposure to the material may result in cancer on the basis of:

- appropriate long-term animal studies
- other relevant information.

Principal routes of exposure are by accidental skin and eye contact and inhalation of

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## Section 11 - TOXICOLOGICAL INFORMATION

generated dusts.

In chronic cadmium poisoning, bone softening (osteomalacia), radiological decreases in bone density, high levels of calcium in the urine (hyper-calciuria) and renal stones reflect disturbance in calcium metabolism. Although this disturbance may reflect cadmium induced renal tubular damage there is evidence in rats that direct action on the bone may produce metabolic breakdown of collagen (the main structural protein in bone). Animals sometimes exhibit significant hypertension after chronic exposure to cadmium in drinking water. Epidemiological studies suggest a relationship between airborne cadmium and human cardiovascular disease though this is still equivocal. From a diagnostic point of view the formation of a yellow ring as part of the tooth structure in chronically exposed humans may be significant. Heavy smoking has been reported to considerably increase tissue calcium levels and would appear to increase the risk of cumulative toxic effects. Repeated or prolonged exposure may result in a loss of smell, ulceration of the nose, pulmonary emphysema and mild anaemia. Occupational exposure to cadmium (in the form of the oxide) may increase the risk of prostate, respiratory and genito-urinary cancers in humans. In one follow-up study of an investigation of cadmium-nickel workers and cadmium-copper alloy factory workers, additional cases of nasopharyngeal, colorectal, prostatic and lung-cancer were reported. In a further study of cadmium smelter workers a significant trend was noted for cumulative cadmium exposures and lung cancer mortality. This relationship has not been seen in other follow-up studies. Male rats continuously exposed to cadmium chloride aerosols developed dose-related increases in adenocarcinomas, epidermoid (squamous cell) carcinomas and mucoepidermoid carcinomas of the lung. When introduced through intratracheal instillation, cadmium chloride induced invasive prostatic carcinomas in the rat.

## TOXICITY AND IRRITATION

No significant acute toxicological data identified in literature search.

WARNING: This substance has been classified by the IARC as Group 2A: Probably Carcinogenic to Humans.

Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen [National Toxicology Program: U.S. Dep. of Health & Human Services 2002].

## Section 12 - ECOLOGICAL INFORMATION

Marine Pollutant: Not Determined

Hazardous Air Pollutant: Yes

Fish LC50 (96hr.) (mg/l): 0.062

The material is classified as an ecotoxin\* because the Fish LC50 (96 hours) is less than or equal to 0.1 mg/l

\* Classification of Substances as Ecotoxic (Dangerous to the Environment)

Appendix 8, Table 1

Compiler's Guide for the Preparation of International Chemical Safety Cards: 1993

Commission of the European Communities.

Significant compartments for soluble cadmium salts are likely to be soil and water.

Cadmium(II) adsorbs to sediments. Once in an aquatic environment cadmium is highly mobile ; its dissolved species are highly labile and are first to be released, for example, when salinity is increased in estuaries. In fresh water, cadmium toxicity is influenced by water hardness (the harder the water, the lower the toxicity). Cadmium can bioaccumulate and bioconcentrate in the food chain. Biomagnification in terrestrial food chains is not expected.

Drinking Water Standards:

5 ug/l (UK max.)

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## Section 12 - ECOLOGICAL INFORMATION

3 ug/l (WHO guideline)

Soil Guidelines: Dutch Criteria:

0.8 mg/kg (target)

12 mg/kg (intervention)

Air Quality Standards:

<1-5 ng/m<sup>3</sup> (rural areas)

10-20 ng/m<sup>3</sup> (urban and industrial areas) (WHO Guidelines)

The importance of cadmium in environmental disease is illustrated in the outbreak of itai-itai disease caused by the contamination of rice paddies in Japan by smelter waste. Cadmium toxicity affected the skeletal system of inhabitants of the region resulting in severe bony deformities and chronic renal disease. Although cadmium exposure has been implicated in the pathogenesis of the syndrome, vitamin D deficiencies and other nutritional deficiencies are also thought to be implicated. ("Itai-itai" translates to "ouch-ouch" reflecting the accompanying bone pain). Sewage sludge and phosphate fertilisers are often contaminated with cadmium which then concentrates in plants grown on contaminated soils. Compared with other heavy metals cadmium is mobile in the aqueous environment and may exist as the hydrated ion, as complexes with carbonate, chloride or sulfate or with humic acids. Cadmium thus tends to move in the environment and is widely distributed. It is taken up by organisms and is bioaccumulated. Bioconcentration in the aquatic environment is greatest in invertebrates such as mollusks and crustaceans, followed by fish and plants. However, under reducing conditions, cadmium forms the insoluble sulfide and precipitates in the sediment. The biological production of sulfide also promotes the formation of cadmium sulfide. Cadmium is one of the most readily absorbed metals in plants grown on contaminated soils and the potential for bioaccumulation is substantial. Zinc and calcium are also thought to bioaccumulate with cadmium with a resultant protective action against its toxic effects.

## Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible. Special hazard may exist - specialist advice may be required.
- Consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury or incinerate residue at an approved site.
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
- Puncture containers to prevent re-use and bury at an authorised landfill.

## Section 14 - TRANSPORTATION INFORMATION



Labels Required: TOXIC

HAZCHEM: 2X

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## Section 14 - TRANSPORTATION INFORMATION

### UNDG:

Dangerous Goods Class: 6.1  
UN Number: 2570  
Shipping Name: CADMIUM COMPOUND

Subrisk: None  
Packing Group: III

### Air Transport IATA:

ICAO/IATA Class: 6.1  
UN/ID Number: 2570  
ERG Code: 6L  
Shipping name: CADMIUM COMPOUND

ICAO/IATA Subrisk: None  
Packing Group: III

### Maritime Transport IMDG:

IMDG Class: 6.1  
UN Number: 2570  
EMS Number: F- A, S- A  
Shipping name: CADMIUM COMPOUND

IMDG Subrisk: None  
Packing Group: III  
Marine Pollutant: Not Determined

## Section 15 - REGULATORY INFORMATION

### REGULATIONS

cadmium acetate (CAS: 543-90-8) is found on the following regulatory lists;  
Great Lakes Binational Toxics Strategy Substances (U.S. and Canada) - Level II Substances

cadmium acetate (CAS: 5743-04-4) is found on the following regulatory lists;  
Great Lakes Binational Toxics Strategy Substances (U.S. and Canada) - Level II Substances

No data available for cadmium acetate as CAS: 89759-80-8, CAS: 24558-49-4, CAS: 29398-76-3, CAS: 245727-62-2.

## Section 16 - OTHER INFORMATION

### INGREDIENTS WITH MULTIPLE CAS NUMBERS

| Ingredient Name | CAS                                                                               |
|-----------------|-----------------------------------------------------------------------------------|
| cadmium acetate | 89759- 80- 8, 543- 90- 8, 5743 - 04- 4, 24558- 49- 4, 29398- 76- 3, 245727- 62- 2 |

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 12-May-2018