

## Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

### Product Identifier:

**Identification as on the label/Trade name:** Cadmium, Enriched Cadmium.

**Molecular weight:** 112.4

**Chemical formula:** Cd

**Synonyms:** None.

### Details of the supplier of the Safety Data Sheet:

Neonest AB  
Storgatan 70C, Solna  
SE-17152  
Sweden

### Contact details:

+46-76-219-9731

### 24-hour Emergency Contact:

Swedish Poisons Centre  
Phone: 112 - Ask for Poisons Information, 112 – begär Giftinformation.

### Other International Contacts:

CHEMTREC 24-hour: +1-703-741-5500 (US + Worldwide)  
NHS: 111 (UK)  
Charite: +49 30 450 531 000 (Netherlands)  
INTCF: +34 917689800 (Spain)  
CapTv: +33 1 40 05 48 48 (France)

## Section 2: Hazards Identification

### Classification of the substances or mixture:

**The mixture is classified according to:** Regulation EC 1272/2008 [EU-GHS/CLP]

#### **Hazard classes/Hazard categories:**

Acute Toxicity, Inhalation (Category 2)  
Mutagenicity (Category 2)  
Carcinogenicity (Category 1B)  
Reproductive Toxicity (Category 2)  
STOT RE (Category 1)  
Aquatic Acute (Category 1)  
Aquatic Chronic (Category 1)

#### **Hazard statement:**

H330  
H341  
H350  
H361  
H372  
H400  
H410

### Label elements:

**Hazard pictograms:**



**Signal Words:** Danger.

**Hazard Statements:**

- H330 Fatal if inhaled.
- H341 Suspected of causing genetic defects.
- H350 May cause cancer.
- H361 Suspected of damaging fertility or the unborn child.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

**Precautionary Statements:**

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe dust.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing.
- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 + P313 IF exposed or concerned: Get medical advice/attention.
- P337 + P313 If eye irritation persists: Get medical advice/attention.
- P391 Collect spillage.
- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local and national regulations.

**Other hazards:** None known.

### Section 3: Composition/Information on Ingredients

**Substance/Mixture:** Substance.

**Ingredients:**

Substance name (IUPAC/EC)	CAS-No.	Molecular weight	Concentration % by weight	Classification EC1272/2008	
	EC-No.				
Cadmium	7440-43-9	112.4	>99%	Acute Tox. 2	H330
				Muta. 1B	H341
				Carc. 1B H350	H350
				Repr. 1B H360	H361
	231-152-8			STOT RE 1	H372
				Aquatic Acute 1	H400

				Aquatic Chronic 1H410
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For explanation of abbreviations see Section 16.

## Section 4: First-Aid Measures

### Description of first aid measures:

**In case of inhalation:** Move to fresh air. If not breathing, give artificial respiration. Seek immediate medical attention.

**In case of skin contact:** If on skin, rinse well with running water for a minimum of 15 minutes. Remove exposed or contaminated clothing, taking care not to contaminate the eyes. Seek immediate medical attention if any adverse effects occur.

**In case of eye contact:** Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. Seek immediate medical attention.

**In case of ingestion:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical attention.

### Most important symptoms and effects, both acute and delayed:

**Inhalation:** May be harmful if inhaled; material may be irritating to mucous membranes and upper respiratory tract.

**Eyes:** May cause eye irritation.

**Skin contact:** May cause skin irritation.

**Ingestion:** May be harmful if swallowed. Can cause nausea, salivation, vomiting and diarrhoea. Ingestion of Cadmium may be fatal. Ingestion of metal may cause "metal fume fever" with flu-like symptoms of weakness, fever, headache, chills, nausea, vomiting, dizziness, sweating, muscular pain, cough and difficulty breathing. Acute pulmonary edema may develop within 24 hours and reaches a maximum by three days. The first chronic effect of exposure to cadmium is generally kidney damage, manifested by excretion of excessive protein in the urine, followed by anaemia, teeth discoloration and loss of smell. Cadmium also is believed to cause pulmonary emphysema and bone disease.

**Indication of any immediate medical attention and special treatment needed:** Treat symptomatically. Show this safety data sheet to a physician or emergency room.

## Section 5: Fire-Fighting Measures

### Extinguisher media:

**Suitable extinguisher media:** Water spray, carbon dioxide, dry chemical powder or appropriate foam.

**Unsuitable extinguishing media:** None known.

**Special hazards arising from the mixture:** Emits toxic fumes during a fire.

**Advice for fire-fighters:** Wear self-contained breathing apparatus and protective clothing for firefighting.

**Further information:** Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

## Section 6: Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures:

**Personal precautions:** Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

**Environmental precautions:** Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Local authorities should be advised if significant spillages cannot be contained.

**Methods for containment and cleaning up:**

**Methods for cleaning up:** Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

**Reference to other sections:**

Treat recovered material as described in the section "Disposal considerations".

## Section 7: Handling and Storage

**Precautions for safe handling:**

**Advice on safe handling:** Open and handle container with care to minimize contact with skin, mouth and eyes. Avoid prolonged or repeated exposure.

**Hygiene measures:** Do not eat, drink or smoke when using this product.

**Conditions for safe storage, including incompatibilities:**

**Requirements for storage areas and containers:** Store in a cool, dry place in tightly closed containers.

## Section 8: Exposure Controls/Personal Protection

**Control parameters:**

**Occupational exposure limits:** Contains no substances with occupational exposure limit values.

**Exposure controls:**

**Appropriate engineering controls:** Safety shower and eye bath, mechanical exhaust required.

**Individual protection measures, such as personal protective equipment:**

**Eye/face protection:** Use safety glasses. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

**Hand protection:** Use chemical resistant gloves. Examples of preferred glove barrier materials include: Butyl rubber, Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, polyvinyl alcohol, Polyvinyl chloride.

**Body protection:** Wear protective clothing as appropriate.

**Respiratory protection:** Use an approved air-purifying respirator. Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines.

## Section 9: Physical and Chemical Properties

**Information on basic physical and chemical properties**

**Appearance (form):** Solid (powder).

**Colour:** Light grey.

**Odour:** Odourless.

**Odour threshold:** No data available.

**Molecular Weight:** 112.4

**pH (concentration):** No data available.

**Melting point/range (°C):** 320.9 °C

**Boiling point/range (°C):** 765 °C

**Freezing point (°C):** No data available.

**Flash point (°C):** No data available.

**Evaporation rate:** No data available.

**Flammability (solid, gas):** No data available.

**Ignition temperature (°C):** No data available.

**Upper/lower flammability/explosive limits:** No data available.

**Vapour pressure (20 °C):** No data available.

**Vapour density:** No data available.

**Relative density (25 °C):** 8.65 g/cm<sup>3</sup>

**Water solubility (g/L) at 20 °C:** No data available.

**n-Octanol/Water partition coefficient:** No data available.

**Auto-ignition temperature:** No data available.

**Decomposition temperature:** No data available.

**Viscosity, dynamic (mPa s):** No data available.

**Explosive properties:** The substance or mixture is not classified as explosive.

**Oxidising properties:** The substance or mixture is not classified as oxidizing.

## Section 10: Stability and Reactivity

**Reactivity:** No dangerous reaction known under conditions of normal use.

**Chemical stability:** Stable under normal conditions.

**Possibility of hazardous reactions:** No dangerous reaction known under conditions of normal use.

**Conditions to avoid:** None known.

**Incompatible materials:** Acids, oxidizing agents, potassium.

**Hazardous decomposition products:** Cadmium/cadmium oxides.

## Section 11: Toxicological Information

### Information on toxicological effects:

#### **Acute Toxicity:**

Oral LD<sub>50</sub>: LD<sub>50</sub> Oral, Rat - 225 mg/kg

Inhalation LC<sub>50</sub>: LC<sub>50</sub> Inhalation, Rat - 30 hours, 25 mg/m<sup>3</sup>

### Classification according to GHS (1272/2008/EG, CLP)

#### **Skin corrosion/irritation:**

Not classified based on available information.

#### **Serious eye damage/eye irritation:**

Not classified based on available information.

#### **Respiratory or skin sensitisation:**

Not classified based on available information.

#### **Germ cell mutagenicity:**

Suspected of causing genetic defects.

#### **Carcinogenicity:**

IARC: 1 - Group 1: Carcinogenic to humans (Cadmium)

NTP: Known to be human carcinogen (Cadmium)

OSHA: 1910.1027 (Cadmium)

#### **Reproductive toxicity:**

Suspected of damaging fertility or the unborn child.

#### **Specific target organ toxicity – single exposure (STOT):**

Not classified based on available information.

**Specific target organ toxicity (STOT) – repeated exposure:**

Causes damage to organs through prolonged or repeated exposure.

**Aspiration toxicity:**

Not classified based on available information.

## Section 12: Ecological Information

**Toxicity:**

Toxicity to fish:

Mortality LOEC, *Oncorhynchus mykiss*, 0.0015 mg/l, 96 hours.

LC<sub>50</sub> - *Pimephales promelas* - 1.0 ug/l, 96 hours.

Toxicity to daphnia and other aquatic invertebrates:

Mortality NOEC – Daphnia, 0.019 mg/l, 24 hours.

Mortality LOEC – Daphnia, 0.039 mg/l, 24 hours.

EC50 - *Daphnia magna*, 0.024 mg/l, 48 hours.

Toxicity to algae:

Growth inhibition IC50 - *Chaetoceros sp.*, 0.028 mg/l, 48 hours.

**Persistence and degradability:** No data available.

**Bioaccumulative potential:** *Oncorhynchus mykiss* - 72 days. Bioconcentration factor (BCF): 55.

**Mobility in soil:** No data available.

**Results of PBT& vPvB assessment:** Not relevant.

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life, with long-lasting effects.

## Section 13: Disposal Considerations

**Waste treatment methods:** Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Observe all local and national environmental regulations.

## Section 14: Transport Information

**DOT:**

**Proper Shipping Name:** CADMIUM COMPOUND.

**Hazard Class:** 6.1

**UN Number:** 2570

**Packing Group:** I

**Hazard Labels:**



**IATA:**

**Proper Shipping Name:** CADMIUM COMPOUND.

**Hazard Class:** 6.1

**UN Number:** 2570

**Packing Group:** I

## Section 15: Regulatory Information

**EU regulations:**

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**  
Not listed.

**Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**  
Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry**  
Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**  
Not listed.

**Authorisations:**

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**  
Not listed.

**Restrictions on use:**

**Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use**  
Not regulated.

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**  
Not listed.

**Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work**  
Not regulated.

**Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding.**  
Not regulated.

**Other EU regulations:**

**Directive 2012/18/EU on major accident hazards involving dangerous substances**

Not listed.

**Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.**

Always applicable.

**Directive 94/33/EC on the protection of young people at work**

Not listed.

**Other regulations:** The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

**OSHA Hazards:** Carcinogen, Target Organ Effect, Highly Toxic by Inhalation, Toxic by Ingestion, Reproductive Hazard, Mutagen.

**SARA 302 Components:**

**SARA 302:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components:** The following components are subject to reporting levels established by SARA Title III, Section 313: Cadmium, CAS No. 7440-43-9, Revision Date 1993-04-24.

**SARA 311/312 Hazards:** Acute Health Hazard, Chronic Health Hazard.

**Massachusetts Right To Know Components:** Cadmium, CAS No. 7440-43-9, Revision Date 1993-04-24.

**Pennsylvania Right To Know Components:** Cadmium, CAS No. 7440-43-9, Revision Date 1993-04-24.

**New Jersey Right To Know Components:** Cadmium, CAS No. 7440-43-9, Revision Date 1993-04-24.

**California Prop. 65 Components:** WARNING! This product contains a chemical known to the State of California to cause cancer. Cadmium, CAS No. 7440-43-9, Revision Date 2009-02-01.

**California Prop. 65 Components:** WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Cadmium, CAS No. 7440-43-9, Revision Date 2009-02-01.

**National regulations:** Follow national regulation for work with chemical agents.

**Chemical safety assessment:** No Chemical Safety Assessment has been carried out.

**Section 16: Other Information****List of abbreviations:**

ACGIH American Conference of Governmental Industrial Hygienists  
ADR European Agreement Concerning the International Carriage of Dangerous Goods by Road  
ALARA As Low As Is Reasonably Achievable  
AMU Atomic Mass Unit  
ANSI American National Standards Institute  
BLS Basic Life Support  
CAM Continuous Air Monitor  
CAS Chemical Abstracts Service (division of the American Chemical Society)  
CEN European Committee for Standardization  
CERCLA Comprehensive Environmental Response Compensation and Liability Act  
CLP Classification, Labelling and Packaging (European Union)  
CPR Controlled Products Regulations (Canada)  
CWA Clean Water Act (USA)  
DAC Derived Air Concentration (USA)  
DOE United States Department of Energy (USA)  
DOT United States Department of Transportation (USA)  
DSL Domestic Substances List (Canada)  
EC50 Half Maximal Effective Concentration



EINECS European Inventory of Existing Commercial Chemical Substances  
EHS Environmentally Hazardous Substance  
ELINCS European List of Notified Chemical Substances  
EMS Emergency Response Procedures for Ships Carrying Dangerous Goods  
EPA Environmental Protection Agency (USA)  
EPCRA Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986  
GHS Globally Harmonized System  
HMIS Hazardous Materials Identification System (USA)  
IARC International Agency for Research on Cancer  
IATA International Air Transport Association  
IBC Intermediate Bulk Containers  
ICAO International Civil Aviation Organization  
IDLH Immediately Dangerous to Life or Health  
IMDG International Maritime Code for Dangerous Goods  
LC50 Lethal concentration, 50 percent  
LD50 Lethal dose, 50 percent  
LDLO Lethal Dose Low  
LOEC Lowest-Observed-Effective Concentration  
MARPOL International Convention for the Prevention of Pollution from Ships  
MSHA Mine Safety and Health Administration (USA)  
NCRP National Council on Radiation Protection & Measurements (USA)  
NDSL Non-Domestic Substances List (Canada)  
NFPA National Fire Protection Association (USA)  
NIOSH National Institute for Occupational Safety and Health (USA)  
NOEC No Observed Effect Concentration  
N.O.S. Not Otherwise Specified  
NRC Nuclear Regulatory Commission (USA)  
NTP National Toxicology Program (USA)  
OSHA Occupational Safety and Health Administration (USA)  
PBT Persistent Bioaccumulative and Toxic Chemical  
PEL Permissible Exposure Limit  
PIH Poisonous by Inhalation Hazard  
RCRA Resource Conservation and Recovery Act (USA)  
RCT Radiation Control Technician  
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)  
RID Regulations Concerning the International Transport of Dangerous Goods by Rail  
RTECS Registry of Toxic Effects of Chemical Substances  
SARA Superfund Amendments and Reauthorization Act (USA)  
TDG Transportation of Dangerous Goods (Canada)  
TIH Toxic by Inhalation Hazard  
TLV Threshold Limit Value  
TPQ Threshold Planning Quantity  
TSCA Toxic Substances Control Act  
TWA Time Weighted Average  
UN United Nations (Number)  
VOC Volatile Organic Compound  
vPvB Very Persistent Very Bioaccumulative Chemical  
WGK Wassergefährdungsklassen (Germany: Water Hazard Classes)

WHMIS Workplace Hazardous Materials Information System

**References:**

Not available.

**Full text of any H-statements not written out in full under Sections 2 to 15:**

H330 Fatal if inhaled.

H341 Suspected of causing genetic defects.

H350 May cause cancer.

H361 Suspected of damaging fertility or the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

**Revision information:**

None.

**Training information:**

Follow training instructions when handling this material.

**Further Information:**

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.