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

1.1 **Product identifiers**

<table>
<thead>
<tr>
<th>Product name</th>
<th>Cadmium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Number</td>
<td>414891</td>
</tr>
<tr>
<td>Brand</td>
<td>Anonymous</td>
</tr>
<tr>
<td>Index-No.</td>
<td>048-002-00-0</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>7440-43-9</td>
</tr>
</tbody>
</table>

1.2 **Relevant identified uses of the substance or mixture and uses advised against**

Identified uses:
- Laboratory chemicals
- Manufacture of substances

2. **HAZARDS IDENTIFICATION**

2.1 **Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]**
- Carcinogenicity (Category 1B)
- Germ cell mutagenicity (Category 2)
- Reproductive toxicity (Category 2)
- Acute toxicity, Inhalation (Category 2)
- Specific target organ toxicity - repeated exposure (Category 1)
- Acute aquatic toxicity (Category 1)
- Chronic aquatic toxicity (Category 1)

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**
- May cause cancer. Possible risk of irreversible effects.
- Very toxic by inhalation. Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
- Also very toxic by inhalation.
- Also toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
- Possible risk of irreversible effects.

2.2 **Label elements**

**Labelling according Regulation (EC) No 1272/2008 [CLP]**

- **Signal word**: Danger

**Pictogram**

- Hazard statement(s)
  - H330: Fatal if inhaled.
  - H341: Suspected of causing genetic defects.
  - H350: May cause cancer.
  - H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
  - H372: Causes damage to organs through prolonged or repeated exposure.
  - H410: Very toxic to aquatic life with long lasting effects.

- Precautionary statement(s)
  - P201: Obtain special instructions before use.
  - P260: Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
  - P273: Avoid release to the environment.
  - P281: Use personal protective equipment as required.
  - P284: Wear respiratory protection.
  - P310: Immediately call a POISON CENTER or doctor/ physician.

- Supplemental Hazard Statements
  - none

**According to European Directive 67/548/EEC as amended.**

**Hazard symbol(s)**

- R-phrase(s)
  - R45: May cause cancer.
  - R26: Also very toxic by inhalation.
  - R48/23/25: Also toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
  - R68: Possible risk of irreversible effects.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R62 Possible risk of impaired fertility.
R63 Possible risk of harm to the unborn child.
S-phrase(s)
S3 Avoid exposure - obtain special instructions before use.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S60 This material and its container must be disposed of as hazardous waste.
S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.

Restricted to professional users.

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Formula : Cd
Molecular Weight : 112.41 g/mol

Component | Concentration
--- | ---
Cadmium | 
CAS-No. | 7440-43-9
EC-No. | 231-152-8
Index-No. | 048-002-00-0

4. FIRST AID MEASURES

4.1 Description of first aid measures
General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
Damage to the lungs., Kidney injury may occur., prolonged or repeated exposure can cause.; Vomiting, Diarrhoea, Lung irritation

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Cadmium/cadmium oxides

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed
6.4 **Reference to other sections**
For disposal see section 13.

7. **HANDLING AND STORAGE**

7.1 **Precautions for safe handling**
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use.
Provide appropriate exhaust ventilation at places where dust is formed.

7.2 **Conditions for safe storage, including any incompatibilities**
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
Air sensitive.

7.3 **Specific end uses**
no data available

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1 **Control parameters**

8.2 **Exposure controls**

**Appropriate engineering controls**
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**Personal protective equipment**

**Eye/face protection**
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Body Protection**
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-faced supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. **PHYSICAL AND CHEMICAL PROPERTIES**

9.1 **Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance</td>
<td>Form: granular</td>
</tr>
<tr>
<td>b) Odour</td>
<td>no data available</td>
</tr>
<tr>
<td>c) Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>d) pH</td>
<td>no data available</td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
<td>Melting point/range: 320,9 °C - lit.</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
<td>765 °C - lit.</td>
</tr>
<tr>
<td>g) Flash point</td>
<td>not applicable</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
<td>no data available</td>
</tr>
<tr>
<td>i) Flammability (solid, gas)</td>
<td>no data available</td>
</tr>
<tr>
<td>j) Upper/lower flammability</td>
<td>no data available</td>
</tr>
</tbody>
</table>
explosive limits

k) Vapour pressure no data available
l) Vapour density no data available
m) Relative density 8.65 g/cm³ at 25 °C

n) Water solubility no data available

p) Autoignition no data available

q) Decomposition temperature no data available

r) Viscosity no data available

s) Explosive properties no data available

t) Oxidizing properties no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity no data available

10.2 Chemical stability no data available

10.3 Possibility of hazardous reactions no data available

10.4 Conditions to avoid no data available

10.5 Incompatible materials
Oxidizing agents, acids

10.6 Hazardous decomposition products
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - rat - 225 mg/kg
LC50 Inhalation - rat - 30 h - 25 mg/m³
Remarks: Lungs, Thorax, or Respiration:Dyspnea.

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
In vitro tests showed mutagenic effects

Carcinogenicity
Possible human carcinogen
IARC: 1 - Group 1: Carcinogenic to humans (Cadmium)

Reproductive toxicity
Suspected human reproductive toxicant

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
no data available

Potential health effects
Inhalation: May be fatal if inhaled. May cause respiratory tract irritation.
Ingestion: Toxic if swallowed.
Skin: Toxic if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.

Signs and Symptoms of Exposure
Damage to the lungs, Kidney injury may occur, prolonged or repeated exposure can cause; Vomiting, Diarrhoea, Lung irritation

Additional Information
RTECS: EU9800000

12. ECOLOGICAL INFORMATION
12.1 Toxicity
Toxicity to fish
  mortality LOEC - Oncorhynchus mykiss (rainbow trout) - 0,0015 mg/l - 96 h
  LC50 - Pimephales promelas (fathead minnow) - 1,0 μg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates
  mortality NOEC - Daphnia - 0,019 mg/l - 24 h
  mortality LOEC - Daphnia - 0,039 mg/l - 24 h
  EC50 - Daphnia magna (Water flea) - 0,024 mg/l - 48 h
Toxicity to algae
  Growth inhibition IC50 - Chaetoceros sp. - 0,028 mg/l - 48 h

12.2 Persistence and degradability
  no data available

12.3 Bioaccumulative potential
  Bioaccumulation
  Oncorhynchus mykiss (rainbow trout) - 72 d -1,27 μg/l
  Bioconcentration factor (BCF): 55

12.4 Mobility in soil
  no data available

12.5 Results of PBT and vPvB assessment
  no data available

12.6 Other adverse effects
  Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS
13.1 Waste treatment methods
  Product
  Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
  Contaminated packaging
  Dispose of as unused product.

14. TRANSPORT INFORMATION
14.1 UN number
  ADR/RID: 2570
  IMDG: 2570
  IATA: 2570

14.2 UN proper shipping name
  ADR/RID: CADMIUM COMPOUND (Cadmium)
  IMDG: CADMIUM COMPOUND (Cadmium)
  IATA: Cadmium compound (Cadmium)
  Passenger Aircraft: Not permitted for transport

14.3 Transport hazard class(es)
  ADR/RID: 6.1
  IMDG: 6.1
  IATA: 6.1

14.4 Packaging group
  ADR/RID: I
  IMDG: I
  IATA: I

14.5 Environmental hazards
  ADR/RID: no
  IMDG Marine pollutant: no
  IATA: no

14.6 Special precautions for user
  no data available

15. REGULATORY INFORMATION
  This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
15.1  Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

15.2  Chemical Safety Assessment
no data available

16.  OTHER INFORMATION

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information this document is based on the resent state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. guidechem shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.