1 Identification

・ Product identifier

・ Trade name: Cadmium 10000 μg/mL in 10% HCl

・ Article number: 10M8-2

・ Details of the supplier of the safety data sheet

・ Manufacturer/Supplier:
  High-Purity Standards  
  7221 Investment Drive, North Charleston, SC 29418 United States  
  Telephone: +1-843-767-7900  
  Fax: +1-843-767-7906  
  highpuritystandards.com  
  Email: info@highpuritystandards.com

・ Information department: Product safety department

・ Emergency telephone number:
  INFOTRAC  
  Emergency telephone numbers 1-800-535-5053  
  Other emergency telephone numbers 1-352-323-3500

2 Hazard(s) identification

・ Classification of the substance or mixture

  GHS06 Skull and crossbones

  Acute Tox. 3  H331 Toxic if inhaled.

  GHS08 Health hazard

  Muta. 2  H341 Suspected of causing genetic defects.
  Carc. 1B  H350 May cause cancer.
  Repr. 2  H361 Suspected of damaging fertility or the unborn child.
  STOT RE 1  H372 Causes damage to organs through prolonged or repeated exposure.

  GHS05 Corrosion

  Skin Corr. 1A  H314 Causes severe skin burns and eye damage.
  Eye Dam. 1  H318 Causes serious eye damage.

  GHS07

  STOT SE 3  H335 May cause respiratory irritation.

(Contd. on page 2)
Safety Data Sheet
acc. to OSHA HCS

Printing date 01/30/2020 Reviewed on 11/16/2018

Trade name: Cadmium 10000 μg/mL in 10% HCl

· Label elements
· GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
· Hazard pictograms

GHS05 GHS06 GHS07 GHS08

· Signal word Danger
· Hazard-determining components of labeling:
  hydrochloric acid
  cadmium
· Hazard statements
  H331 Toxic if inhaled.
  H314 Causes severe skin burns and eye damage.
  H341 Suspected of causing genetic defects.
  H350 May cause cancer.
  H361 Suspected of damaging fertility or the unborn child.
  H335 May cause respiratory irritation.
  H372 Causes damage to organs through prolonged or repeated exposure.
· Precautionary statements
  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Do not breathe dusts or mists.
  Wash thoroughly after handling.
  Do not eat, drink or smoke when using this product.
  Use only outdoors or in a well-ventilated area.
  Wear protective gloves/protective clothing/eye protection/face protection.
  If swallowed: Rinse mouth. Do NOT induce vomiting.
  If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
  Continue rinsing.
  Immediately call a poison center/doctor.
  IF exposed or concerned: Get medical advice/attention.
  Specific treatment (see on this label).
  Get medical advice/attention if you feel unwell.
  Wash contaminated clothing before reuse.
  Store in a well-ventilated place. Keep container tightly closed.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.
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Trade name: Cadmium 10000 μg/mL in 10% HCl

· Classification system:
  · NFPA ratings (scale 0 - 4)
    Health = 3
    Fire = 0
    Reactivity = 0

· HMIS-ratings (scale 0 - 4)

3
0
0

· Other hazards
  · Results of PBT and vPvB assessment
    · PBT: Not applicable.
    · vPvB: Not applicable.

3 Composition/information on ingredients

· Chemical characterization: Mixtures
  · Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:
  7647-01-0 hydrochloric acid 10.0%
  7440-43-9 cadmium 1.0%

· Chemical identification of the substance/preparation
  7732-18-5 water, distilled, conductivity or of similar purity 89.0%

4 First-aid measures

· Description of first aid measures
  · General information:
    Immediately remove any clothing soiled by the product.
    Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
    Remove breathing apparatus only after contaminated clothing have been completely removed.
    In case of irregular breathing or respiratory arrest provide artificial respiration.

  · After inhalation:
    Supply fresh air or oxygen; call for doctor.
    In case of unconsciousness place patient stably in side position for transportation.

  · After skin contact:
    Immediately wash with water and soap and rinse thoroughly.

  · After eye contact:
    Rinse opened eye for several minutes under running water. Then consult a doctor.

  · After swallowing:
    Drink copious amounts of water and provide fresh air. Immediately call a doctor.

· Information for doctor:
  · Most important symptoms and effects, both acute and delayed: No further relevant information available.
5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents: Use fire fighting measures that suit the environment.
  - Special hazards arising from the substance or mixture
    During heating or in case of fire poisonous gases are produced.
- Advice for firefighters
  - Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  - Mount respiratory protective device.
  - Wear protective equipment. Keep unprotected persons away.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Use neutralizing agent.
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- Reference to other sections
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.
- Protective Action Criteria for Chemicals

  - PAC-1:
    | 7647-01-0 hydrochloric acid | 1.8 ppm |
    | 7440-43-9 cadmium | 0.10 mg/m³ |

  - PAC-2:
    | 7647-01-0 hydrochloric acid | 22 ppm |
    | 7440-43-9 cadmium | 0.76 mg/m³ |

  - PAC-3:
    | 7647-01-0 hydrochloric acid | 100 ppm |
    | 7440-43-9 cadmium | 4.7 mg/m³ |
7 Handling and storage

- Handling:
  - Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Open and handle receptacle with care.
    Prevent formation of aerosols.
  - Information about protection against explosions and fires: Keep respiratory protective device available.
  - Conditions for safe storage, including any incompatibilities
    - Storage:
      - Requirements to be met by storerooms and receptacles: No special requirements.
      - Information about storage in one common storage facility: Not required.
      - Further information about storage conditions: Keep receptacle tightly sealed.
  - Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
  - Components with limit values that require monitoring at the workplace:
    7440-43-9 cadmium
    - PEL Long-term value: 0.005 mg/m³ as Cd; see 29 CFR 1910.1027
    - REL See Pocket Guide App. A
    - TLV Long-term value: 0.01 0.002* mg/m³ as Cd; *respirable fraction; BEI
  - Ingredients with biological limit values:
    7440-43-9 cadmium
    - BEI 5 µg/g creatinine
      Medium: urine
      Time: not critical
      Parameter: Cadmium (background)
    - 5 µg/L
      Medium: blood
      Time: not critical
      Parameter: Cadmium (background)
50.0.3 Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.

Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

Information on basic physical and chemical properties
General Information

Appearance:
Form: Liquid
Color: colorless
Odor: Characteristic
### 50.0.3

- **Odor threshold:** Not determined.
- **pH-value:** Not determined.
- **Change in condition**
  - **Melting point/Melting range:** Undetermined.
  - **Boiling point/Boiling range:** 100 °C (212 °F)
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not applicable.
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Product is not selfigniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**
  - **Lower:** Not determined.
  - **Upper:** Not determined.
- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17.3 mm Hg)
- **Density at 20 °C (68 °F):** 1.09142 g/cm³ (9.1079 lbs/gal)
- **Bulk density:** 1,032 kg/m³
- **Relative density**
- **Vapor density**
- **Evaporation rate**
- **Solubility in / Miscibility with**
  - **Water:** Not miscible or difficult to mix.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - **Dynamic:** Not determined.
  - **Kinematic:** Not determined.
- **Solvent content:**
  - **Water:** 89.0 %
  - **VOC content:** 0.00 %
  - **0.0 g/l / 0.00 lb/gal**
- **Solids content:** 1.0 %
- **Other information**
  - No further relevant information available.

### 10 Stability and reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
Trade name: Cadmium 10000 μg/mL in 10% HCl

- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
    - LD/LC50 values that are relevant for classification:
      - 7647-01-0 hydrochloric acid
        - Oral LD50 900 mg/kg (rabbit)
      - 7440-43-9 cadmium
        - Oral LD50 225 mg/kg (rat)
  - Primary irritant effect:
    - on the skin: Strong caustic effect on skin and mucous membranes.
    - on the eye: Strong caustic effect. Strong irritant with the danger of severe eye injury.
    - Sensitization: No sensitizing effects known.
  - Additional toxicological information:
    - The product shows the following dangers according to internally approved calculation methods for preparations:
      - Toxic
      - Corrosive
      - Irritant
    - Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    - 7647-01-0 hydrochloric acid 3
    - 7440-43-9 cadmium 1
  - NTP (National Toxicology Program)
    - 7440-43-9 cadmium K
  - OSHA-Ca (Occupational Safety & Health Administration)
    - 7440-43-9 cadmium

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
50.0.3

· Behavior in environmental systems:
· Bioaccumulative potential No further relevant information available.
· Mobility in soil No further relevant information available.
· Additional ecological information:
· General notes:
  Water hazard class 3 (Self-assessment): extremely hazardous for water
  Do not allow product to reach ground water, water course or sewage system, even in small quantities.
  Must not reach bodies of water or drainage ditch undiluted or unneutralized.
  Danger to drinking water if even extremely small quantities leak into the ground.
· Results of PBT and vPvB assessment
  · PBT: Not applicable.
  · vPvB: Not applicable.
· Other adverse effects No further relevant information available.

13 Disposal considerations

· Waste treatment methods
· Recommendation:
  Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
· Uncleaned packagings:
· Recommendation: Disposal must be made according to official regulations.

14 Transport information

· UN-Number
· DOT, ADR, IMDG, IATA UN1789

· UN proper shipping name
· DOT
  · ADR 1789 HYDROCHLORIC ACID mixture
  · IMDG, IATA HYDROCHLORIC ACID mixture

· Transport hazard class(es)
· DOT
  · Class 8 Corrosive substances
### Trade name: Cadmium 10000 μg/mL in 10% HCl

<table>
<thead>
<tr>
<th>Label</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>Class: 8 (C1) Corrosive substances</td>
</tr>
<tr>
<td>Class</td>
<td>Label: 8</td>
</tr>
<tr>
<td>IMDG, IATA</td>
<td>Class: 8 Corrosive substances</td>
</tr>
<tr>
<td>Packing group</td>
<td>Label: 8</td>
</tr>
<tr>
<td>DOT, ADR, IMDG, IATA</td>
<td>Class: II</td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Warning: Corrosive substances</td>
</tr>
<tr>
<td>Danger code (Kemler):</td>
<td>80</td>
</tr>
<tr>
<td>EMS Number:</td>
<td>F-A,S-B</td>
</tr>
<tr>
<td>Segregation groups</td>
<td>Strong acids</td>
</tr>
<tr>
<td>Stowage Category</td>
<td>C</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Transport/Additional information:</td>
<td></td>
</tr>
<tr>
<td>DOT</td>
<td>Quantity limitations: On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L</td>
</tr>
<tr>
<td>ADR</td>
<td>Excepted quantities (EQ): Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</td>
</tr>
<tr>
<td>IMDG</td>
<td>Limited quantities (LQ): 1L Excepted quantities (EQ): Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</td>
</tr>
</tbody>
</table>
Trade name: Cadmium 10000 μg/mL in 10% HCl

15 Regulatory information

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

  Sara

  - Section 355 (extremely hazardous substances):
    7647-01-0 hydrochloric acid

  - Section 313 (Specific toxic chemical listings):
    7647-01-0 hydrochloric acid
    7440-43-9 cadmium

  - TSCA (Toxic Substances Control Act):
    All components have the value ACTIVE.

  - Hazardous Air Pollutants
    7647-01-0 hydrochloric acid

  - Proposition 65
    - Chemicals known to cause cancer:
      7440-43-9 cadmium

    - Chemicals known to cause reproductive toxicity for females:
      None of the ingredients is listed.

    - Chemicals known to cause reproductive toxicity for males:
      7440-43-9 cadmium

    - Chemicals known to cause developmental toxicity:
      7440-43-9 cadmium

  - Carcinogenic categories
    - EPA (Environmental Protection Agency)
      7440-43-9 cadmium B1

    - TLV ( Threshold Limit Value established by ACGIH)
      7647-01-0 hydrochloric acid A4
      7440-43-9 cadmium A2

  - NIOSH-Ca (National Institute for Occupational Safety and Health)
    7440-43-9 cadmium

  - GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**

GHS05  GHS06  GHS07  GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
  - hydrochloric acid
  - cadmium

· **Hazard statements**
  - H331 Toxic if inhaled.
  - H314 Causes severe skin burns and eye damage.
  - H341 Suspected of causing genetic defects.
  - H350 May cause cancer.
  - H361 Suspected of damaging fertility or the unborn child.
  - H335 May cause respiratory irritation.
  - H372 Causes damage to organs through prolonged or repeated exposure.

· **Precautionary statements**
  - Obtain special instructions before use.
  - Do not handle until all safety precautions have been read and understood.
  - Do not breathe dusts or mists.
  - Wash thoroughly after handling.
  - Do not eat, drink or smoke when using this product.
  - Use only outdoors or in a well-ventilated area.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - If swallowed: Rinse mouth. Do NOT induce vomiting.
  - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - Immediately call a poison center/doctor.
  - IF exposed or concerned: Get medical advice/attention.
  - Specific treatment (see on this label).
  - Get medical advice/attention if you feel unwell.
  - Wash contaminated clothing before reuse.
  - Store in a well-ventilated place. Keep container tightly closed.
  - Store locked up.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

· **Additional classification according to Decree on Hazardous Materials:**
  - Carcinogenic hazardous material group III (dangerous).

· **Information about limitation of use:**
  - Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.
  - Exceptions can be made by the authorities in certain cases.
Safety Data Sheet
acc. to OSHA HCS

Trade name: Cadmium 10000 μg/mL in 10% HCl

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Department issuing SDS: Environment protection department.

· Contact:
High-Purity Standards
Tel: 843-767-7900
Fax: 843-767-7906

· Date of preparation / last revision 01/30/2020 / -

· Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  NIOSH: National Institute for Occupational Safety
  OSHA: Occupational Safety & Health
  TLV: Threshold Limit Value
  PEL: Permissible Exposure Limit
  REL: Recommended Exposure Limit
  BEI: Biological Exposure Limit
  Acute Tox. 3: Acute toxicity – Category 3
  Skin Corr. 1A: Skin corrosion/irritation – Category 1A
  Eye Dam. 1: Serious eye damage/eye irritation – Category 1
  Muta. 2: Germ cell mutagenicity – Category 2
  Carc. 1B: Carcinogenicity – Category 1B
  Repr. 2: Reproductive toxicity – Category 2
  STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
  STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1