

1 Identification

- **Product identifier**
- **Product Name:** 10,000 µg/mL Cadmium
- **Part Name:**
PLCD2-3Y
PLCD2-3X
- **Application of the substance / the mixture** *Certified Reference Material*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Spex CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA
732-549-7144
USMet-CRMSales@antylia.com
- **Information department:** *product safety department*
- **Emergency telephone number:**
Emergency Phone Number (24 hours)
CHEMTREC (800-424-9300)
Outside US: 703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Toxicity - Inhalation 3

H331 Toxic if inhaled.



GHS08 Health hazard

Germ Cell Mutagenicity 2

H341 Suspected of causing genetic defects.

Carcinogenicity 1B

H350 May cause cancer.

Toxic to Reproduction 2

H361 Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Repeated Exposure 1

H372 Causes damage to the kidneys, the respiratory system and the bones through prolonged or repeated exposure.



GHS05 Corrosion

Skin Corrosion 1B

H314 Causes severe skin burns and eye damage.

Eye Damage 1

H318 Causes serious eye damage.

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



GHS05



GHS06



GHS08

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**
nitric acid
cadmium oxide (nonpyrophoric)
- **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.
H372 Causes damage to the kidneys, the respiratory system and the bones through prolonged or repeated exposure.
- **Precautionary statements**
P260 Do not breathe dusts or mists.

Printing date 01/23/2023

Reviewed on 01/23/2023

Product Name: 10,000 µg/mL Cadmium

(Contd. of page 1)

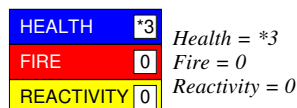
- P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
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.
P310 Immediately call a poison center/doctor.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P321 Specific treatment (see on this label).
P363 Wash contaminated clothing before reuse.
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/regional/national/international regulations.

· Classification system:

· NFPA ratings (scale 0 - 4)



· HMIS-ratings (scale 0 - 4)



· 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:

7697-37-2	nitric acid	5.0%
1306-19-0	cadmium oxide (nonpyrophoric)	1.1%

· Chemical identification of the substance/preparation

7732-18-5	water, distilled, conductivity or of similar purity	93.9%
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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: Do not give anything to eat or drink - Do not induce vomiting

· Information for Doctor:

· Most important symptoms and effects, both acute and delayed No further relevant information available.

· Indication of any immediate medical attention and special treatment needed 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.

(Contd. on page 3)

Product Name: 10,000 µg/mL Cadmium

(Contd. of page 2)

- **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:**
Dilute with plenty of water.
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:		
1306-19-0	cadmium oxide (nonpyrophoric)	0.11 mg/m ³
· PAC-2:		
1306-19-0	cadmium oxide (nonpyrophoric)	0.87 mg/m ³
· PAC-3:		
1306-19-0	cadmium oxide (nonpyrophoric)	5.4 mg/m ³

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:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.

1306-19-0 cadmium oxide (nonpyrophoric)	
PEL	Long-term value: 0.005 mg/m ³ as Cd; see 29 CFR 1910.1027
REL	See Pocket Guide App. A
TLV	Long-term value: 0.01 0.002* mg/m ³ as Cd; A2; *respirable fraction; BEI

- **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.

(Contd. on page 4)

Product Name: 10,000 µg/mL Cadmium

(Contd. of page 3)

Avoid contact with the eyes and skin.

· **Respiratory protection:**

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:	According to product specification
Odor:	Characteristic
Odour Threshold:	Not applicable.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	83 °C (181.4 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not applicable.

· **Decomposition temperature:** Not applicable.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower:	Not applicable.
Upper:	Not applicable.

· **Vapor pressure at 20 °C (68 °F):** 23 hPa (17.3 mm Hg)

· **Density at 20 °C (68 °F)** 1.0906 g/cm³ (9.10106 lbs/gal)

· **Relative density** Not applicable.

· **Vapor density** Not applicable.

· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**

Water:	Fully miscible.
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· **Partition coefficient (n-octanol/water):** Not applicable.

· **Viscosity:**

Dynamic:	Not applicable.
Kinematic:	Not applicable.

· **Solvent content:**

Water:	93.9 %
VOC content:	0.00 %

Solids content:	1.1 %
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(Contd. on page 5)

Printing date 01/23/2023

Reviewed on 01/23/2023

Product Name: 10,000 µg/mL Cadmium

(Contd. of page 4)

· **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.
- **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:**

7697-37-2 nitric acid

Inhalative LC50/4 h 2.65 mg/l (ATE)

- **Primary irritant effect:**
- **on the skin:** 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
Product is suspected to cause damage to fertility.
Product is suspected to cause birth defects.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

1306-19-0 cadmium oxide (nonpyrophoric)

I

· **NTP (National Toxicology Program)**

1306-19-0 cadmium oxide (nonpyrophoric)

K

· **OSHA-Ca (Occupational Safety & Health Administration)**

1306-19-0 cadmium oxide (nonpyrophoric)

12 Ecological information

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

(Contd. on page 6)

US

Printing date 01/23/2023

Reviewed on 01/23/2023

Product Name: 10,000 µg/mL Cadmium

(Contd. of page 5)

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· UN-Number · DOT, ADR, IMDG, IATA	UN2922
· UN proper shipping name · DOT · ADR · IMDG, IATA	Corrosive liquids, toxic, n.o.s. (Nitric acid, cadmium oxide (nonpyrophoric)) 2922 CORROSIVE LIQUID, TOXIC, N.O.S. (NITRIC ACID, cadmium oxide (nonpyrophoric)) CORROSIVE LIQUID, TOXIC, N.O.S. (NITRIC ACID, cadmium oxide (nonpyrophoric))
· Transport hazard class(es) · DOT	
  	
· Class · Label	8 Corrosive substances 8, 6.1
· ADR	
 	
· Class · Label	8 Corrosive substances 8+6.1
· IMDG	
 	
· Class · Label	8 Corrosive substances 8/6.1
· IATA	
 	
· Class · Label	8 Corrosive substances 8 (6.1)
· Packing group · DOT, ADR, IMDG, IATA	III
· Environmental hazards: · Marine pollutant:	Not applicable. Yes (DOT)
· Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category · Stowage Code	Warning: Corrosive substances 86 F-A,S-B (SGG1a) Strong acids B SW2 Clear of living quarters.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information: · DOT · Remarks:	Special marking with the symbol (fish and tree).

(Contd. on page 7)

Printing date 01/23/2023

Reviewed on 01/23/2023

Product Name: 10,000 µg/mL Cadmium

(Contd. of page 6)

· ADR · Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 2922 CORROSIVE LIQUID, TOXIC, N.O.S. (NITRIC ACID, CADMIUM OXIDE (NONPYROPHORIC)), 8 (6.1), III

15 Regulatory information

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

· Section 313 (Specific toxic chemical listings):	
7697-37-2	nitric acid
1306-19-0	cadmium oxide (nonpyrophoric)

· TSCA (Toxic Substances Control Act):		
7732-18-5	water, distilled, conductivity or of similar purity	ACTIVE
1306-19-0	cadmium oxide (nonpyrophoric)	ACTIVE

· Hazardous Air Pollutants	
1306-19-0	cadmium oxide (nonpyrophoric)

· Proposition 65	
· Chemicals known to cause cancer:	
1306-19-0	cadmium oxide (nonpyrophoric)

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

· Chemicals known to cause reproductive toxicity for males:	
None of the ingredients is listed.	

· Chemicals known to cause developmental toxicity:	
None of the ingredients is listed.	

· <i>Carcinogenic categories</i>		
· <i>EPA (Environmental Protection Agency)</i>		
1306-19-0	cadmium oxide (nonpyrophoric)	<i>B1</i>

· TLV (Threshold Limit Value)		
1306-19-0	cadmium oxide (nonpyrophoric)	A2

· NIOSH-Ca (National Institute for Occupational Safety and Health)	
1306-19-0	cadmium oxide (nonpyrophoric)

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

- **Hazard pictograms**



- **Signal word** Danger

- **Hazard-determining components of labeling:**

nitric acid

cadmium oxide (nonpyrophoric)

- **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.

H372 Causes damage to the kidneys, the respiratory system and the bones through prolonged or repeated exposure.

(Contd. on page 8)

Product Name: 10,000 µg/mL Cadmium

(Contd. of page 7)

Precautionary statements

- P260 Do not breathe dusts or mists.
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- 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.
- P310 Immediately call a poison center/doctor.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P321 Specific treatment (see on this label).
- P363 Wash contaminated clothing before reuse.
- 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/regional/national/international regulations.

National regulations:

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.

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: product safety department

Contact:

Spex CertiPrep, LLC.
1-732-549-7144

Date of preparation / last revision 01/23/2023

Abbreviations and acronyms:

ADR: Accord relatif au transport international 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
 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
 Acute Toxicity - Inhalation 3: Acute toxicity – Category 3
 Skin Corrosion 1B: Skin corrosion/irritation – Category 1B
 Eye Damage 1: Serious eye damage/eye irritation – Category 1
 Germ Cell Mutagenicity 2: Germ cell mutagenicity – Category 2
 Carcinogenicity 1B: Carcinogenicity – Category 1B
 Toxic to Reproduction 2: Reproductive toxicity – Category 2
 Specific Target Organ Toxicity - Repeated Exposure 1: Specific target organ toxicity (repeated exposure) – Category 1