



# SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 01/26/2015

Version 1.4

## SECTION 1. Identification

### Product identifier

Product number	119777
Product name	Cadmium standard solution traceable to SRM from NIST $\text{Cd}(\text{NO}_3)_2$ in $\text{HNO}_3$ 0.5 mol/l 1000 mg/l Cd CertiPUR®

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Reagent for analysis
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### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   General Inquiries: +1-978-715-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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## SECTION 2. Hazards identification

### GHS Classification

Corrosive to Metals, Category 1, H290

Skin irritation, Category 2, H315

Eye irritation, Category 2A, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

*Hazard pictograms*



*Signal Word*

Warning

*Hazard Statements*

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

*Precautionary Statements*

P234 Keep only in original container.

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P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ eye protection/ face protection.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P321 Specific treatment (see supplemental first aid instructions on this label).  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P362 Take off contaminated clothing and wash before reuse.  
P390 Absorb spillage to prevent material damage.  
P406 Store in corrosive resistant stainless steel container with a resistant liner.

### Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

Chemical nature                      Aqueous solution

### Hazardous ingredients

*Chemical Name (Concentration)*

CAS-No.

*nitric acid* ( $\geq 1\%$  -  $< 5\%$ )

7697-37-2

Exact percentages are being withheld as a trade secret.

*Cadmium nitrate* ( $\geq 0.1\%$  -  $< 1\%$ )

10325-94-7

Exact percentages are being withheld as a trade secret.

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## SECTION 4. First aid measures

### Description of first-aid measures

*Inhalation*

After inhalation: fresh air.

*Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing.

*Eye contact*

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

*Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

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

irritant effects

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The following applies to cadmium compounds in general: mucosal irritations, coughing, and dyspnoea after inhalation. Inhalation may lead to the formation of oedemas in the respiratory tract. Toxic effect on gastrointestinal tract. Long-term exposure to the chemical results in toxic effect on kidneys, lungs, bones.

The following applies to nitrites/nitrates in general: methemoglobinemia after the uptake of large quantities.

### Indication of any immediate medical attention and special treatment needed

No information available.

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## SECTION 5. Fire-fighting measures

### Extinguishing media

#### *Suitable extinguishing media*

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapors.

### Advice for firefighters

#### *Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### *Further information*

Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### Environmental precautions

Do not empty into drains.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent and neutralizing material (e.g. Chemisorb® H<sup>+</sup>, Art. No. 101595).

Dispose of properly. Clean up affected area.

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## SECTION 7. Handling and storage

### Precautions for safe handling

Observe label precautions.

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### Conditions for safe storage, including any incompatibilities

Tightly closed.

Store at +15°C to +25°C (+59°F to +77°F).

## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### Ingredients

Basis	Value	Threshold limits	Remarks
<i>nitric acid 7697-37-2</i>			
ACGIH	Time Weighted Average (TWA):	2 ppm	
	Short Term Exposure Limit (STEL):	4 ppm	
NIOSH/GUIDE	Recommended exposure limit (REL):	2 ppm	
		5 mg/m <sup>3</sup>	
	Short Term Exposure Limit (STEL):	4 ppm	
		10 mg/m <sup>3</sup>	
OSHA_TRANS	PEL:	2 ppm	
		5 mg/m <sup>3</sup>	
Z1A	Time Weighted Average (TWA):	2 ppm	
		5 mg/m <sup>3</sup>	
	Short Term Exposure Limit (STEL):	4 ppm	
		10 mg/m <sup>3</sup>	
<i>Cadmium nitrate 10325-94-7</i>			
ACGIH	Time Weighted Average (TWA):	0.01 mg/m <sup>3</sup>	Expressed as: as Cd
	Time Weighted Average (TWA):	0.002 mg/m <sup>3</sup>	Form of exposure: Respirable fraction. Expressed as: as Cd

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

### Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

### Eye/face protection

Safety glasses

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### *Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

### *Other protective equipment:*

Acid-resistant protective clothing.

### *Respiratory protection*

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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## SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	odorless
Odor Threshold	No information available.
pH	ca. 0.5 at 68 °F (20 °C)
Melting point	No information available.
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Density	ca. 1.013 g/cm <sup>3</sup> at 68 °F (20 °C)
Relative density	No information available.
Water solubility	at 68 °F (20 °C) soluble

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Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	No information available.
Oxidizing properties	No information available.
Corrosion	May be corrosive to metals.

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### SECTION 10. Stability and reactivity

#### Reactivity

See below

#### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

#### Possibility of hazardous reactions

Risk of explosion with:

Risk of ignition or formation of inflammable gases or vapors with:

Alkali metals, Alkaline earth metals, Ammonia, alkalines, hydrides, halogens, halogen compounds, nonmetallic oxides, nonmetallic halides, nonmetallic hydrogen compounds, nonmetals, phosphides, nitrides, lithium silicide, hydrogen peroxide, organic combustible substances, oxidizable substances, organic solvent, Alcohols, Ketones, Aldehydes, anhydrides, Amines, anilines, Nitriles, organic nitro compounds, hydrazine and derivatives, acetylidene, Metals, metal alloys, metallic oxides, acids

#### Conditions to avoid

no information available

#### Incompatible materials

Metals, metal alloys  
(generation of hydrogen)

#### Hazardous decomposition products

no information available

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### SECTION 11. Toxicological information

#### Information on toxicological effects

*Likely route of exposure*

Eye contact, Skin contact

*Target Organs*

Eyes

Skin

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Respiratory system  
teeth

### *Acute oral toxicity*

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

### *Acute inhalation toxicity*

Symptoms: Possible damages:, Irritation symptoms in the respiratory tract.

### *Skin irritation*

Mixture causes skin irritation.

### *Eye irritation*

Mixture causes serious eye irritation.

### *Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

### *Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

## Carcinogenicity

IARC	Group 1: Carcinogenic to humans	
	Cadmium nitrate	10325-94-7
OSHA		
	Cadmium nitrate	10325-94-7
NTP	Known carcinogen.	
	Cadmium nitrate	10325-94-7
ACGIH	A2: Suspected human carcinogen	
	Cadmium nitrate	10325-94-7

## Further information

Quantitative data on the toxicity of this product are not available.

Further toxicological data:

The following applies to cadmium compounds in general: mucosal irritations, coughing, and dyspnoea after inhalation. Inhalation may lead to the formation of oedemas in the respiratory tract. Toxic effect on gastrointestinal tract. Long-term exposure to the chemical results in toxic effect on kidneys, lungs, bones.

The following applies to nitrites in general: risk of methemoglobin formation. Possibility of formation of nitrosamines with secondary and in given circumstances even tertiary amines.

Nitrosamines have shown themselves to be carcinogenic in animal experiments.

Further data:

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

## Ingredients

*nitric acid*

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### *Skin irritation*

Rabbit

Result: Causes severe burns.

(IUCLID)

### *Eye irritation*

Rabbit

Result: Causes burns.

(IUCLID)

### *Germ cell mutagenicity*

*Genotoxicity in vitro*

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

## *Cadmium nitrate*

### *Acute oral toxicity*

Acute toxicity estimate: 500.1 mg/kg

Expert judgment

### *Acute inhalation toxicity*

Acute toxicity estimate: 1.6 mg/l; dust/mist

Expert judgment

### *Acute dermal toxicity*

Acute toxicity estimate : 1,100.1 mg/kg

Expert judgment

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## SECTION 12. Ecological information

### **Ecotoxicity**

No information available.

### **Persistence and degradability**

No information available.

### **Bioaccumulative potential**

No information available.

### **Mobility in soil**

No information available.

### *Additional ecological information*

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of drinking- water supplies.

Hazard for drinking water supplies.

Discharge into the environment must be avoided.

## **Ingredients**

### *nitric acid*

*Toxicity to fish*

LC50 Gambusia affinis (Mosquito fish): 72 mg/l; 96 h (IUCLID)

### *Biodegradability*

The methods for determining the biological degradability are not applicable to inorganic substances.



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Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

## Henry constant

2482 Pa·m<sup>3</sup>/mol

Method: (calculated)

(Lit.) Distribution preferentially in air.

## Cadmium nitrate

## M-Factor

10

### SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

### SECTION 14. Transport information

#### Land transport (DOT)

UN number	UN 3264
Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONT. NITRIC ACID NOT MORE THAN 5%)
Class	8
Packing group	III
Environmentally hazardous	--

#### Air transport (IATA)

UN number	UN 3264
Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONT. NITRIC ACID SOLUTION)
Class	8
Packing group	III
Environmentally hazardous	--
Special precautions for user	no

#### Sea transport (IMDG)

UN number	UN 3264
Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONT. NITRIC ACID NOT MORE THAN 5%)
Class	8
Packing group	III

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Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-B

## SECTION 15. Regulatory information

### United States of America

#### SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

##### *Ingredients*

nitric acid	7697-37-2	2.4334 %
Cadmium nitrate	10325-94-7	0.2077 %

#### SARA 302

The following components are subject to reporting levels established by SARA Title III, Section 302:

##### *Ingredients*

nitric acid	7697-37-2
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#### DEA List I

Not listed

#### DEA List II

Not listed

### US State Regulations

#### Massachusetts Right To Know

##### *Ingredients*

nitric acid

#### Pennsylvania Right To Know

##### *Ingredients*

nitric acid

#### New Jersey Right To Know

##### *Ingredients*

nitric acid

Cadmium nitrate

#### California Prop 65 Components

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

##### *Ingredients*

Cadmium nitrate

#### California Prop 65 Components

WARNING: this product contains a chemical known in the State of California to cause cancer.

##### *Ingredients*

Cadmium nitrate

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### Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

KOREA: Not in compliance with the inventory

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## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

### Labeling

*Hazard pictograms*



### *Signal Word*

Warning

### *Hazard Statements*

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H412 Harmful to aquatic life with long lasting effects.

### *Precautionary Statements*

Prevention

P273 Avoid release to the environment.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P313 Get medical advice/ attention.

### Full text of H-Statements referred to under sections 2 and 3.

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

### Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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