

## SAFETY DATA SHEET

Revision Date 01-April-2024

Revision Number 5

### 1. Identification

**Product Name** Cadmium 106 plasma standard solution

**Cat No. :** 45274

**Synonyms** No information available

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

#### Details of the supplier of the safety data sheet

##### Company

##### **Importer/Distributor**

Fisher Scientific  
112 Colonnade Road,  
Ottawa, ON K2E 7L6,  
Canada  
Tel: 1-800-234-7437

##### **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11

Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99

**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

### 2. Hazard(s) identification

#### Classification

**WHMIS 2015 Classification** Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

|  |            |
|--|------------|
| <b>Corrosive to metals</b>               | Category 1 |
| <b>Skin Corrosion/Irritation</b>         | Category 2 |
| <b>Serious Eye Damage/Eye Irritation</b> | Category 2 |

#### Label Elements

##### **Signal Word**

Warning

##### **Hazard Statements**

May be corrosive to metals  
Causes skin irritation  
Causes serious eye irritation

**Precautionary Statements****Prevention**

Keep only in original container

Wash face, hands and any exposed skin thoroughly after handling

Wear protective gloves/protective clothing/eye protection/face protection

**Response**

IF ON SKIN: Wash with plenty of soap and water

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

If skin irritation occurs: Get medical advice/attention

If eye irritation persists: Get medical advice/attention

Absorb spillage to prevent material damage

Take off contaminated clothing and wash it before reuse

**Storage**

Store in corrosive resistant polypropylene container with a resistant inliner

**Disposal**

Dispose of contents/container to an approved waste disposal plant

### 3. Composition/Information on Ingredients

| Component   | CAS-No    | Weight % |
|-------------|-----------|----------|
| Water       | 7732-18-5 | 98       |
| Nitric acid | 7697-37-2 | 2        |
| Cadmium     | 7440-43-9 | 0.00     |

### 4. First-aid measures

**General Advice**

If symptoms persist, call a physician.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

**Ingestion**

Clean mouth with water and drink afterwards plenty of water.

**Most important symptoms/effects  
Notes to Physician**

None reasonably foreseeable.  
Treat symptomatically

### 5. Fire-fighting measures

**Unsuitable Extinguishing Media**

No information available

**Flash Point**

No information available

|   |                          |
|---|--------------------------|
| <b>Method -</b>                         | No information available |
| <b>Autoignition Temperature</b>         | No information available |
| <b>Explosion Limits</b>                 |                          |
| <b>Upper</b>                            | No data available        |
| <b>Lower</b>                            | No data available        |
| <b>Sensitivity to Mechanical Impact</b> | No information available |
| <b>Sensitivity to Static Discharge</b>  | No information available |

**Specific Hazards Arising from the Chemical**

Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**

None known.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

|               |                     |                    |                         |
|---------------|---------------------|--------------------|-------------------------|
| <b>Health</b> | <b>Flammability</b> | <b>Instability</b> | <b>Physical hazards</b> |
| 2             | 0                   | 0                  | -                       |

## 6. Accidental release measures

**Personal Precautions** Ensure adequate ventilation. Use personal protective equipment as required.

**Environmental Precautions** Should not be released into the environment. See Section 12 for additional Ecological Information.

**Methods for Containment and Clean Up** Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

## 7. Handling and storage

**Handling** Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

**Storage.** Keep containers tightly closed in a dry, cool and well-ventilated place.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component   | Alberta   | British Columbia  | Ontario TWAEV   | Quebec  | ACGIH TLV   | OSHA PEL  | NIOSH   |
|-------------|---|---|---|---|---|---|---|
| Nitric acid | TWA: 2 ppm<br>TWA: 5.2 mg/m <sup>3</sup><br>STEL: 4 ppm<br>STEL: 10 mg/m <sup>3</sup> | TWA: 2 ppm<br>STEL: 4 ppm                                   | TWA: 2 ppm<br>STEL: 4 ppm                                   | TWA: 2 ppm<br>TWA: 5.2 mg/m <sup>3</sup><br>STEL: 4 ppm<br>STEL: 10 mg/m <sup>3</sup> | TWA: 2 ppm<br>STEL: 4 ppm                                   | (Vacated) TWA: 2 ppm<br>(Vacated) TWA: 5 mg/m <sup>3</sup><br>(Vacated) STEL: 4 ppm<br>(Vacated) STEL: 10 mg/m <sup>3</sup><br>TWA: 2 ppm<br>TWA: 5 mg/m <sup>3</sup> | IDLH: 25 ppm<br>TWA: 2 ppm<br>TWA: 5 mg/m <sup>3</sup><br>STEL: 4 ppm<br>STEL: 10 mg/m <sup>3</sup> |
| Cadmium     | TWA: 0.01 mg/m <sup>3</sup>   | TWA: 0.01 mg/m <sup>3</sup><br>TWA: 0.002 mg/m <sup>3</sup> | TWA: 0.01 mg/m <sup>3</sup><br>TWA: 0.002 mg/m <sup>3</sup> | TWA: 0.025 mg/m <sup>3</sup>  | TWA: 0.01 mg/m <sup>3</sup><br>TWA: 0.002 mg/m <sup>3</sup> | Ceiling: 0.3 mg/m <sup>3</sup><br>Ceiling: 0.6 mg/m <sup>3</sup><br>(Vacated) STEL: 0.3 ppm<br>TWA: 5 µg/m <sup>3</sup>   | IDLH: 9 mg/m <sup>3</sup>   |

**Legend**

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures**

Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

**Personal protective equipment****Eye Protection**

Goggles

**Hand Protection**

Wear appropriate protective gloves and clothing to prevent skin exposure.

| Glove material | Breakthrough time | Glove thickness | Glove comments         |
|----------------|-------------------|-----------------|------------------------|
| Natural rubber | See manufacturers | -               | Splash protection only |
| Nitrile rubber | recommendations   |                 |                        |
| Neoprene       |                   |                 |                        |
| PVC            |                   |                 |                        |

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

**Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Recommended Filter type:** Particulates filter conforming to EN 143

When RPE is used a face piece Fit Test should be conducted

**Environmental exposure controls**

No information available.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

## 9. Physical and chemical properties

|                                  |                          |
|----------------------------------|--------------------------|
| Physical State                   | Liquid                   |
| Appearance                       | Colorless                |
| Odor                             | Odorless                 |
| Odor Threshold                   | No information available |
| pH                               | No information available |
| Melting Point/Range              | No data available        |
| Boiling Point/Range              | ~ 100 °C / 212 °F        |
| Flash Point                      | No information available |
| Evaporation Rate                 | No information available |
| Flammability (solid,gas)         | Not applicable           |
| Flammability or explosive limits |                          |
| Upper                            | No data available        |
| Lower                            | No data available        |
| Vapor Pressure                   | No information available |

|  |                              |
|--|------------------------------|
| Vapor Density                          | No information available     |
| Specific Gravity                       | 1 g/cm <sup>3</sup>          |
| Solubility                             | No information available     |
| Partition coefficient; n-octanol/water | No data available            |
| Autoignition Temperature               | No information available     |
| Decomposition Temperature              | No information available     |
| Viscosity                              | No information available     |
| Molecular Formula                      | Matrix: 2% HN O <sub>3</sub> |

## 10. Stability and reactivity

|                                  |  |
|----------------------------------|--|
| Reactive Hazard                  | None known, based on information available |
| Stability                        | Stable under normal conditions.            |
| Conditions to Avoid              | Incompatible products.                     |
| Incompatible Materials           | Strong oxidizing agents                    |
| Hazardous Decomposition Products | None under normal use conditions           |
| Hazardous Polymerization         | Hazardous polymerization does not occur.   |
| Hazardous Reactions              | None under normal processing.              |

## 11. Toxicological information

### Acute Toxicity

#### Product Information

**Oral LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

**Dermal LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

**Vapor LC50** Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

#### Component Information

| Component   | LD50 Oral                 | LD50 Dermal | LC50 Inhalation                            |
|-------------|---------------------------|-------------|--|
| Water       | -                         | -           | -  |
| Nitric acid | Not listed                | Not listed  | LC50 = 2500 ppm. (Rat) 1h                  |
| Cadmium     | LD50 = 2330 mg/kg ( Rat ) | Not listed  | LC50 = 25 mg/m <sup>3</sup> ( Rat ) 30 min |

**Toxicologically Synergistic Products** No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** No information available

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component   | CAS-No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-------------|-----------|------------|------------|------------|------------|------------|
| Water       | 7732-18-5 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Nitric acid | 7697-37-2 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Cadmium     | 7440-43-9 | Group 1    | Known      | A2         | X          | A2         |

IARC (International Agency for Research on Cancer)

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human

Carcinogen

ACGIH: (American Conference of Governmental Industrial

A1 - Known Human Carcinogen

Hygienists)

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

Mexico - Occupational Exposure Limits - Carcinogens

A1 - Confirmed Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Confirmed Animal Carcinogen

A4 - Not Classifiable as a Human Carcinogen

A5 - Not Suspected as a Human Carcinogen

**Mutagenic Effects**

No information available

**Reproductive Effects**

California Proposition 65. Reproductive toxicity.

**Developmental Effects**

No information available.

**Teratogenicity**

No information available.

**STOT - single exposure**

None known

**STOT - repeated exposure**

None known

**Aspiration hazard**

No information available

**Symptoms / effects, both acute and delayed** No information available**Endocrine Disruptor Information**

No information available

**Other Adverse Effects**

The toxicological properties have not been fully investigated.

## 12. Ecological information

**Ecotoxicity**

| Component | Freshwater Algae | Freshwater Fish  | Microtox   | Water Flea                                      |
|-----------|------------------|--|------------|---|
| Cadmium   | Not listed       | LC50: 0.0004 - 0.003 mg/L, 96h (Pimephales promelas)<br>LC50: = 0.016 mg/L, 96h (Oryzias latipes)<br>LC50: = 21.1 mg/L, 96h flow-through (Lepomis macrochirus)<br>LC50: = 0.24 mg/L, 96h static (Cyprinus carpio)<br>LC50: = 4.26 mg/L, 96h semi-static (Cyprinus carpio)<br>LC50: = 0.002 mg/L, 96h (Cyprinus carpio)<br>LC50: = 0.006 mg/L, 96h static (Oncorhynchus mykiss)<br>LC50: = 0.003 mg/L, 96h flow-through (Oncorhynchus mykiss) | Not listed | EC50: = 0.0244 mg/L, 48h Static (Daphnia magna) |

**Persistence and Degradability**

Miscible with water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation**

No information available.

**Mobility**

Will likely be mobile in the environment due to its water solubility.

| Component   | log Pow |
|-------------|---------|
| Nitric acid | -2.3    |

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

**UN-No** UN3264  
**Proper Shipping Name** Corrosive liquid, acidic, inorganic, n.o.s.  
**Technical Name** (nitric acid solution)  
**Hazard Class** 8  
**Packing Group** III

#### TDG

**UN-No** UN3264  
**Proper Shipping Name** Corrosive liquid, acidic, inorganic, n.o.s.  
**Hazard Class** 8  
**Packing Group** III

#### IATA

**UN-No** UN3264  
**Proper Shipping Name** Corrosive liquid, acidic, inorganic, n.o.s.  
**Hazard Class** 8  
**Packing Group** III

#### IMDG/IMO

**UN-No** UN3264  
**Proper Shipping Name** Corrosive liquid, acidic, inorganic, n.o.s.  
**Hazard Class** 8  
**Packing Group** III

### 15. Regulatory information

#### International Inventories

| Component   | CAS-No    | DSL | NDSL | TSCA | TSCA Inventory notification - Active-Inactive | EINECS    | ELINCS | NLP |
|-------------|-----------|-----|------|------|---|-----------|--------|-----|
| Water       | 7732-18-5 | X   | -    | X    | ACTIVE  | 231-791-2 | -      | -   |
| Nitric acid | 7697-37-2 | X   | -    | X    | ACTIVE  | 231-714-2 | -      | -   |
| Cadmium     | 7440-43-9 | X   | -    | X    | ACTIVE  | 231-152-8 | -      | -   |

| Component   | CAS-No    | IECSC | KECL     | ENCS | ISHL | TCSI | AICS | NZIoC | PICCS |
|-------------|-----------|-------|----------|------|------|------|------|-------|-------|
| Water       | 7732-18-5 | X     | KE-35400 | X    | -    | X    | X    | X     | X     |
| Nitric acid | 7697-37-2 | X     | KE-25911 | X    | X    | X    | X    | X     | X     |
| Cadmium     | 7440-43-9 | X     | KE-04397 | X    | -    | X    | X    | X     | X     |

#### Legend:

X - Listed '-' - Not Listed

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

#### Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

| Component   | Canada - National Pollutant Release Inventory (NPRI) | Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances | Canada's Chemicals Management Plan (CEPA) |
|-------------|--|--|---|
| Nitric acid | Part 1, Group A Substance                            |  |   |
| Cadmium     | Part 1, Group B Substance                            |  |   |

**Legend**

NPRI - National Pollutant Release Inventory

**Other International Regulations****Authorisation/Restrictions according to EU REACH**

| Component   | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances  | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)   |
|-------------|---|--|---|
| Nitric acid | -   | Use restricted. See item 75. (see link for restriction details)  | -   |
| Cadmium     | -   | Use restricted. See item 72. (see link for restriction details)<br>Use restricted. See item 23. (see link for restriction details)<br>Use restricted. See item 28. (see link for restriction details)<br>Use restricted. See item 75. (see link for restriction details) | SVHC Candidate list - 231-152-8 - Carcinogenic, Article 57a; Specific target organ toxicity after repeated exposure, Article 57(f) - human health |

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

**REACH links**
<https://echa.europa.eu/authorisation-list>
<https://echa.europa.eu/substances-restricted-under-reach>
<https://echa.europa.eu/candidate-list-table>
**Safety, health and environmental regulations/legislation specific for the substance or mixture**

| Component   | CAS-No    | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|-------------|-----------|----------|------------------------------|---------------------------|--|
| Water       | 7732-18-5 | Listed   | Not applicable               | Not applicable            | Not applicable                             |
| Nitric acid | 7697-37-2 | Listed   | Not applicable               | Not applicable            | Not applicable                             |
| Cadmium     | 7440-43-9 | Listed   | Not applicable               | Not applicable            | 0.01% (Max. Conc.)                         |

| Component   | CAS-No    | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|-------------|-----------|---|--|----------------------------|------------------------------------|
| Water       | 7732-18-5 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |
| Nitric acid | 7697-37-2 | Not applicable  | Not applicable   | Not applicable             | Annex I - Y34                      |
| Cadmium     | 7440-43-9 | Not applicable  | Not applicable   | Not applicable             | Annex I - Y26                      |

## 16. Other information

**Prepared By**

Product Safety Department  
Email: chem.techinfo@thermofisher.com  
www.thermofisher.com

**Revision Date**

01-April-2024

**Print Date**

01-April-2024

**Revision Summary**

New emergency telephone response service provider.



**Disclaimer**

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

**End of SDS**