

## Safety Data Sheet according to WHS Regulations

Printing date 13.11.2018

Version number 1

Revision: 13.11.2018

Hazardous according to criteria of Australian Safety and Compensation Council.

### 1 Identification

- **Product identifier**
- **Product name: Cadmium Standard: 1000 µg/mL Cd in 5% HNO<sub>3</sub> [500ml bottle]**
- **Part number: 5190-8328**
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Agilent Technologies Australia Pty Ltd Tel: 1800 802 402  
679 Springvale Road  
Mulgrave Victoria 3170,  
Australia
- **Further information obtainable from:** e-mail: [pdl-msds\\_author@agilent.com](mailto:pdl-msds_author@agilent.com)
- **Emergency telephone number:** CHEMTREC®: +(61)-290372994

### 2 Hazard(s) Identification

- **Classification of the substance or mixture**



health hazard

Carc. 1B H350 May cause cancer.



corrosion

Eye Dam. 1 H318 Causes serious eye damage.



Skin Irrit. 2 H315 Causes skin irritation.

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



GHS05



GHS08

- **Signal word** Danger

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- **Hazard-determining components of labelling:**

Nitric acid

cadmium

- **Hazard statements**

H315 Causes skin irritation.

H318 Causes serious eye damage.

H350 May cause cancer.

- **Precautionary statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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.

P321 Specific treatment (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.










- **vPvB:** Not applicable.

### 3 Composition and Information on Ingredients

- **Chemical characterisation: Mixtures**

- **Description:** Aqueous solution.

- **Dangerous components:**

CAS: 7697-37-2	Nitric acid	<5%
RTECS: QU5775000	 Ox. Liq. 2, H272;  Skin Corr. 1A, H314	
CAS: 7440-43-9	cadmium	<0.1%
RTECS: EU 9800000	 Acute Tox. 1, H330;  Muta. 2, H341;  Carc. 1B, H350;  Repr. 2, H361;  STOT RE 1, H372;  Aquatic Acute 1, H400;  Aquatic Chronic 1, H410	

- **Additional information:**

The concentration of the acid stated in this SDS is calculated as an absolute mass concentration (%w/v). This is less than the acid concentration stated on the product label and COA, which reflects a percent value of the commercially available concentrated aqueous form of the acid.

For the wording of the listed hazard phrases refer to section 16.

### 4 First Aid Measures

- **Description of first aid measures**

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.

- **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

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

- **After swallowing:** Rinse mouth. Do not induce vomiting.

- **Information for doctor:**

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

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- **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 extinguishing methods suitable for surrounding conditions.
- **Special hazards arising from the substance or mixture**  
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:**  
HazChem Code: 2X  
Wear self-contained respiratory protective device.

### 6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures**  
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:**  
Use neutralising agent.  
Dispose of contaminated material as waste according to item 13.  
Ensure adequate ventilation.  
Absorb liquid components with liquid-binding material.  
**DO NOT USE SAWDUST.**
- **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.

### 7 Handling and Storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/extraction at the workplace.  
Store in cool, dry place in tightly closed receptacles.
- **Information about fire - and explosion protection:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Please refer to the manufacturer's certificate for specific storage and transport temperature conditions.  
Store only in the original receptacle unless other advice is given on the CoA.  
Keep container in a well-ventilated place. Keep away from sources of ignition and heat.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:** Keep container tightly sealed.

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· *Specific end use(s)* No further relevant information available.

### 8 Exposure controls and personal protection

· *Additional information about design of technical facilities:* No further data; see item 7.

· *Control parameters*

· *Ingredients with limit values that require monitoring at the workplace:*

#### 7697-37-2 Nitric acid

WES	Short-term value: 10 mg/m <sup>3</sup> , 4 ppm
	Long-term value: 5.2 mg/m <sup>3</sup> , 2 ppm

#### 7440-43-9 cadmium

WES	Long-term value: 0.01 mg/m <sup>3</sup>
	Note (g); as Cd

· *Additional information:* Lists used were valid at the time of SDS preparation.

· *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 skin.

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 self-contained respiratory protective device.

· *Protection of hands:*

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374



Protective gloves

· *Material of gloves*

PVC gloves

Neoprene gloves

· *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.

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· **Eye protection:**

Tightly sealed goggles

### 9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**

· <b>Form:</b>	Liquid
· <b>Colour:</b>	Colourless
· <b>Odour:</b>	Odourless
· <b>Odour threshold:</b>	Not determined.

· **pH-value:** <2· **Change in condition**

· <b>Melting point/freezing point:</b>	Not determined.
· <b>Initial boiling point and boiling range:</b>	100 °C

· **Flash point:** Not applicable.· **Flammability (solid, gas):** Not determined.· **Ignition temperature:** Not determined· **Decomposition temperature:** Not determined.· **Auto-ignition temperature:** Product is not selfigniting.· **Explosive properties:** Not determined.· **Explosion limits:**

· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.

· **Vapour pressure at 20 °C:** 23 hPa

· <b>Density at 20 °C:</b>	1.03028 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.

· **Solubility in / Miscibility with water:** Fully miscible.· **Partition coefficient: n-octanol/water:** Not determined.· **Viscosity:**

· <b>Dynamic:</b>	Not determined.
· <b>Kinematic:</b>	Not determined.

· **Other information** No further relevant information available.

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### 10 Stability and Reactivity

- **Reactivity** Stable under normal conditions.
- **Chemical stability** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:**  
Formation of toxic gases is possible during heating or in case of fire.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** Heat.
- **Incompatible materials:** Strong oxidizing agents.
- **Hazardous decomposition products:** Formation of toxic gases is possible during heating or in case of fire.

### 11 Toxicological Information

- **Information on toxicological effects**
- **Acute toxicity**

- **LD/LC50 values relevant for classification:**

<b>7697-37-2 Nitric acid</b>		
Inhalative	LC50/4 h	130 mg/l (rat)
<b>7440-43-9 cadmium</b>		
Oral	LD50	2,330 mg/kg (rat)

- **Primary irritant effect:**

- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Strong irritant with the danger of severe eye injury.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Irritant

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**  
Carc. 1B

### 12 Ecological Information

- **Toxicity**

- **Aquatic toxicity:**

<b>7697-37-2 Nitric acid</b>		
LC50/48	180 mg/l	(crustacean)

- **Persistence and degradability** No further relevant information available.
- **Behaviour 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 (German Regulation) (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 sewage water or drainage ditch undiluted or unneutralised.  
Danger to drinking water if even extremely small quantities leak into the ground.

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- **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 packaging:**
- **Recommendation:** Dispose of in accordance with national regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

### 14 Transport information

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>ADG, IMDG, IATA</b></li> <li>· <b>ADG</b></li> <li>· <b>IMDG, IATA</b></li> </ul>  | <p>UN3264<br/>3264 CORROSIVE LIQUID, ACIDIC, INORGANIC,<br/>N.O.S. (NITRIC ACID)<br/>CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.<br/>(NITRIC ACID)</p> |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>ADG, IMDG, IATA</b></li> </ul>  | <p></p>   |
| <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>   | <p>8 Corrosive substances.<br/>8</p>   |
| <ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>ADG, IMDG, IATA</b></li> </ul>   | <p>III</p>   |
| <ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> </ul>  | <p>Not applicable.</p>   |
| <ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> <li>· <b>Danger code (Kemler):</b></li> <li>· <b>EMS Number:</b></li> <li>· <b>Segregation groups</b></li> <li>· <b>Stowage Category</b></li> <li>· <b>Stowage Code</b></li> </ul> | <p>Warning: Corrosive substances.<br/>80<br/>F-A,S-B<br/>Acids<br/>B<br/>SW2 Clear of living quarters.</p>   |
| <ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of Marpol and the IBC Code</b></li> </ul>  | <p>Not applicable.</p>   |

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**· Transport/Additional information:**

· <b>ADG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>Transport category</b>	3
· <b>Tunnel restriction code</b>	E
· <b>Remarks:</b>	HazChem Code: 2X
· <b>UN "Model Regulation":</b>	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), 8, III

### 15 Regulatory information

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

**· Australian Inventory of Chemical Substances**

All ingredients are listed.

**· Standard for the Uniform Scheduling of Medicines and Poisons**

7697-37-2	Nitric acid	S5, S6
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**· Hazard pictograms**



GHS05 GHS08

**· Signal word** *Danger*

**· Hazard-determining components of labelling:**

Nitric acid

cadmium

**· Hazard statements**

H315 Causes skin irritation.

H318 Causes serious eye damage.

H350 May cause cancer.

**· Precautionary statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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.

P321 Specific treatment (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**· Directive 2012/18/EU**

**· Named dangerous substances - ANNEX I** None of the ingredients is listed.

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- **National regulations:**
  - **Additional classification according to Decree on Hazardous Materials, Annex II:**  
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.
  - **Other regulations, limitations and prohibitive regulations**
- |  |         |
|--|---------|
| · <b>Substances of very high concern (SVHC) according to REACH, Article 57</b> |         |
| 7440-43-9  | cadmium |
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Relevant phrases**  
H272 May intensify fire; oxidiser.  
H314 Causes severe skin burns and eye damage.  
H330 Fatal if inhaled.  
H341 Suspected of causing genetic defects.  
H350 May cause cancer.  
H361 Suspected of damaging fertility or the unborn child.  
H372 Causes damage to organs through prolonged or repeated exposure.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.
- **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  
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)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
SVHC: Substances of Very High Concern  
vPvB: very Persistent and very Bioaccumulative  
Ox. Liq. 2: Oxidizing liquids – Category 2  
Acute Tox. 1: Acute toxicity – Category 1  
Skin Corr. 1A: Skin corrosion/irritation – Category 1A  
Skin Irrit. 2: Skin corrosion/irritation – Category 2  
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 RE 1: Specific target organ toxicity (repeated exposure) – Category 1  
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1  
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
- **Sources**  
Tables 3.1 and 3.2 from Annex 6 of EC 1272/2008, EC 1907/2006, EH40/2005 as amended 2011, Registry of Toxic Effects of Chemical Substances (RTECS), The Dictionary of Substances and their Effects, 1st Edition, IUCLID.
- **Data compared to the previous version altered.** All sections have been updated.