

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 13.05.2015

Revision: 13.05.2015

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

- **English additional compounds**
- **1.1 Product identifier**
- **Product Name:** Environmental Calibration Standard, Part Number 5183-4688
- **Part Number:** 5183-4688
- **1.2 Relevant identified uses of the substance or mixture and uses advised against** No further relevant information available.
- **Application of the substance / the mixture**  
Analytical Chemistry  
A 100mL Solution
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Agilent Technologies Manufacturing GmbH & Co. KG  
Hewlett-Packard-Str. 8  
76337 Waldbronn  
Germany
- **Further information obtainable from:** product safety department
- **1.4 Emergency telephone number:** CHEMTREC®: +(44)-870-8200418

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS05 corrosion

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

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



C; Corrosive

- R34: Causes burns.
- **Information concerning particular hazards for human and environment:**  
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:** The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS05

- **Signal word** Danger
- **Hazard-determining components of labelling:**  
nitric acid
- **Hazard statements**  
Causes severe skin burns and eye damage.
- **Precautionary statements**  
If medical advice is needed, have product container or label at hand.  
Keep out of reach of children.  
Read label before use.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
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.  
Store locked up.

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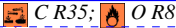


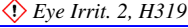
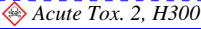

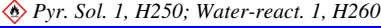

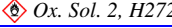

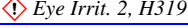
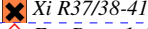
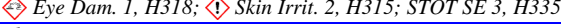

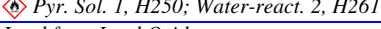

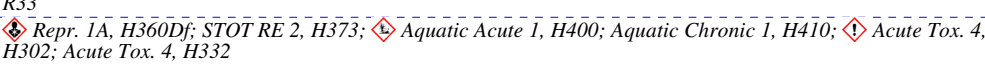

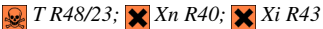

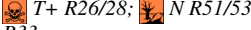

Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

**SECTION 3: Composition/information on ingredients**

- **3.2 Chemical characterisation: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

**Dangerous components:**

CAS: 7697-37-2 EINECS: 231-714-2	nitric acid  	5.0%
<b>CHEMICAL IDENTIFICATION OF THE SUBSTANCE/PREPARATION</b>		
CAS: 87-69-4 EINECS: 201-766-0	(+)-tartaric acid  	<0.9%
CAS: 7439-89-6 EINECS: 231-096-4	iron 	0.1%
CAS: 7439-95-4 EINECS: 231-104-6	magnesium  	0.1%
CAS: 7440-09-7 EINECS: 231-818-8	Potassium from Potassium nitrate  	0.1%
CAS: 7440-23-5 EINECS: 207-838-8	Sodium from Sodium carbonate  	0.1%
CAS: 7440-70-2 EINECS: 207-439-9	Calcium from Calcium carbonate  	0.1%
CAS: 7429-90-5 EINECS: 231-072-3	aluminium  	0.001%
CAS: 7439-92-1 EINECS: 215-267-0	Lead from Lead Oxide  	0.001%
CAS: 7439-96-5 EINECS: 231-105-1	manganese 	0.001%
CAS: 7439-98-7 EINECS: 231-107-2	molybdenum	0.001%
CAS: 7440-02-0 EINECS: 231-111-4	nickel  Carc. Cat. 3 	0.001%
CAS: 7440-22-4 EINECS: 231-131-3	silver	0.001%
CAS: 7440-28-0 EINECS: 233-273-1	Thallium from Thallium nitrate  	0.001%

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CAS: 7440-29-1 EINECS: 231-146-5	Thorium from Thorium nitrate hydrate ☒ Xn R22; ☒ Xi R36/37/38; ☒ O R8 R33 ☒ Ox. Liq. 2, H272; ☒ STOT RE 2, H373; ☒ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	0.001%
CAS: 7440-36-0 EINECS: 231-146-5	antimony	0.001%
CAS: 7440-38-2 EINECS: 231-148-6	arsenic ☒ T R23/25; ☒ N R50/53 ☒ Acute Tox. 3, H301; Acute Tox. 3, H331; ☒ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	0.001%
CAS: 7440-39-3 EINECS: 208-167-3	Barium from Barium carbonate ☒ Xn R22 ☒ Acute Tox. 4, H302	0.001%
CAS: 7440-41-7	Beryllium from Beryllium Acetate ☒ T+ R26/27/28; ☒ T R45 ☒ Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 1, H330; ☒ Carc. 1A, H350	0.001%
CAS: 7440-43-9 EINECS: 231-152-8	cadmium (non-pyrophoric) ☒ T+ R26; ☒ T Carc. Cat. 2 R45-48/23/25; ☒ Xn R62-68-63; ☒ N R50/53 Muta. Cat. 3, Repr. Cat. 3 ☒ Acute Tox. 2, H330; ☒ Muta. 2, H341; Carc. 1B, H350; Repr. 2, H361fd; STOT RE 1, H372; ☒ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	0.001%
CAS: 7440-47-3	Chromium from Chromium(III) nitrate nonahydrate ☒ Xi R36/38; ☒ O R8 ☒ Ox. Liq. 2, H272; ☒ Skin Irrit. 2, H315; Eye Irrit. 2, H319	0.001%
CAS: 7440-48-4 EINECS: 231-158-0	cobalt ☒ Xn R42/43 R53 ☒ Resp. Sens. 1, H334; ☒ Skin Sens. 1, H317; Aquatic Chronic 4, H413	0.001%
CAS: 7440-50-8 EINECS: 231-159-6	copper	0.001%
CAS: 7440-61-1 EINECS: 233-266-3	Uranium from Uranyl Nitrate Hexahydrate ☒ T+ R26/28; ☒ N R51/53 R33 ☒ Acute Tox. 2, H300; Acute Tox. 2, H330; ☒ STOT RE 2, H373; ☒ Aquatic Chronic 2, H411	0.001%
CAS: 7440-62-2 EINECS: 232-261-3	Vanadium from Ammonium trioxovanadate ☒ T+ R28; ☒ Xi R36/37/38 ☒ Acute Tox. 3, H301; ☒ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	0.001%
CAS: 7440-66-6 EINECS: 231-175-3	zinc powder -zinc dust (stabilized) ☒ N R50/53 ☒ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	0.001%
CAS: 7782-49-2 EINECS: 231-957-4	selenium ☒ T R23/25 R33-53 ☒ Acute Tox. 3, H301; Acute Tox. 3, H331; ☒ STOT RE 2, H373; Aquatic Chronic 4, H413	0.001%
CAS: 7732-18-5 EINECS: 231-791-2	water, distilled, conductivity or of similar purity	93.58%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

#### SECTION 4: First aid measures

##### · 4.1 Description of first aid measures

- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** 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 plenty of water and provide fresh air. Call for a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

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· **4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.

**SECTION 5: Firefighting measures**

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

**SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures** Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralising agent.  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **6.4 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.

**SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 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 container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

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

· **8.1 Control parameters**

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

7697-37-2 nitric acid

WEL Short-term value: 2.6 mg/m<sup>3</sup>, 1 ppm

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 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.
- 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.

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**· 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

**SECTION 9: Physical and chemical properties**
**· 9.1 Information on basic physical and chemical properties**
**· General Information**
**· Appearance:**

Form:	Liquid
Colour:	Colourless
Odour:	Odourless
Odour threshold:	Not applicable.

· pH-value: <1

**· Change in condition**

Melting point/Melting range:	0 °C (32°F)
Boiling point/Boiling range:	100 °C (212°F)

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not applicable.

**· Ignition temperature:**

Decomposition temperature: Not applicable.

· Self-igniting: Product is not selfigniting.

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

**· Explosion limits:**

Lower:	Not applicable.
Upper:	Not applicable.

· Vapour pressure at 20 °C: 23 hPa

· Density: 1,0 g/mL @ 20 °C

· Relative density: Not applicable.

· Vapour density: Not applicable.

· Evaporation rate: Not applicable.

· Solubility in / Miscibility with water:

Miscible

· Partition coefficient (n-octanol/water): Not applicable.

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· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	93.6 %
<b>VOC (EC)</b>	0.00 %
· <b>Solids content:</b>	
<b>9.2 Other information</b>	1.4 % No further relevant information available.

**SECTION 10: Stability and reactivity**

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

**SECTION 11: Toxicological information**

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitisation:** No sensitising effects known.
- **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:  
Corrosive  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

**SECTION 12: Ecological information**

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water  
Do not allow product to reach ground water, water course or sewage system.  
Must not reach sewage water or drainage ditch undiluted or unneutralised.  
Danger to drinking water if even small quantities leak into the ground.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

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**SECTION 13: Disposal considerations**

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

**SECTION 14: Transport information**

· <b>14.1 UN-Number</b> · <b>ADR, IMDG, IATA</b>	UN3264
· <b>14.2 UN proper shipping name</b> · <b>ADR</b>  · <b>IMDG, IATA</b>	3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
· <b>14.3 Transport hazard class(es)</b>  · <b>ADR, IMDG, IATA</b>	
 · <b>Class</b> · <b>Label</b>	8 Corrosive substances. 8
· <b>14.4 Packing group</b> · <b>ADR, IMDG, IATA</b>	III
· <b>14.5 Environmental hazards:</b> · <b>Marine pollutant:</b>	No
· <b>14.6 Special precautions for user</b> · <b>Danger code (Kemler):</b> · <b>EMS Number:</b> · <b>Segregation groups</b>	Warning: Corrosive substances. 80 F-A,S-B Acids
· <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>  · <b>ADR</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>  · <b>Transport category</b> · <b>Tunnel restriction code</b>	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml  3 E
· <b>IMDG</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>UN "Model Regulation":</b>	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION), 8, III

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## SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture** No further relevant information available.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

*Disclaimer: 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.

R35 Causes severe burns.

R8 Contact with combustible material may cause fire.

· **Department issuing SDS:** product safety department

### · **Contact:**

Agilent Technologies Manufacturing GmbH & Co. KG

0800 603 1000

[pdl-msds\\_author@agilent.com](mailto:pdl-msds_author@agilent.com)

### · **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

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

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)

VOC: Volatile Organic Compounds (USA, EU)

Ox. Liq. 3: Oxidising Liquids, Hazard Category 3

Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1