

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 09/11/2018

Reviewed on 09/11/2018

**1 Identification**

- **Product identifier**
- **Product Name:** Multi-Element Calibration Standard-3, Part Number 8500-6948
- **Part Number:** 8500-6948
- **Application of the substance / the mixture**  
Reagents and Standards for Analytical Chemistry Laboratory Use  
A 100mL Solution
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Agilent Technologies, Inc.  
5301 Stevens Creek Blvd.  
Santa Clara, CA 95051 USA
- **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**



Skin Irrit. 2 H315 Causes skin irritation.  
Eye Irrit. 2A H319 Causes serious eye irritation.  
STOT SE 3 H335 May cause respiratory irritation.

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



GHS07

- **Signal word** Warning
- **Hazard-determining components of labeling:**  
hydrochloric acid
- **Hazard statements**  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.
- **Precautionary statements**  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Wear protective gloves / eye protection / face protection.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Store locked up.  
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



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**· HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

- **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:**

7647-01-0	hydrochloric acid	10.0%
7697-37-2	nitric acid	1.0%

**· Chemical identification of the substance/preparation**

13494-80-9	tellurium	0.001%
7439-88-5	Iridium from Iridium(III) chloride hydrate	0.001%
7440-05-3	palladium	0.001%
7440-06-4	platinum	0.001%
7440-16-6	rhodium	0.001%
7440-18-8	Ruthenium from Ruthenium (III) chloride trihydrate	0.001%
7440-31-5	tin	0.001%
7440-36-0	antimony	0.001%
7440-57-5	Gold	0.001%
7440-58-6	Hafnium from Hafnium(IV) oxychloride hydrate	0.001%
7732-18-5	water, distilled, conductivity or of similar purity	88.99%

**4 First-aid measures**

- **Description of first aid measures**
- **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. If symptoms persist, 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** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

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- **Methods and material for containment and cleaning up:**  
 Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
 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:**

7647-01-0	hydrochloric acid	1.8 ppm
7697-37-2	nitric acid	0.16 ppm
13494-80-9	tellurium	1.8 mg/m <sup>3</sup>
7439-88-5	Iridium from Iridium(III) chloride hydrate	4.7 mg/m <sup>3</sup>
7440-05-3	palladium	6 mg/m <sup>3</sup>
7440-06-4	platinum	3 mg/m <sup>3</sup>
7440-16-6	rhodium	3 mg/m <sup>3</sup>
7440-18-8	Ruthenium from Ruthenium (III) chloride trihydrate	30 mg/m <sup>3</sup>
7440-31-5	tin	6 mg/m <sup>3</sup>
7440-36-0	antimony	1.5 mg/m <sup>3</sup>
7440-57-5	Gold	0.46 mg/m <sup>3</sup>
7440-58-6	Hafnium from Hafnium(IV) oxychloride hydrate	1.5 mg/m <sup>3</sup>

 · **PAC-2:**

7647-01-0	hydrochloric acid	22 ppm
7697-37-2	nitric acid	24 ppm
13494-80-9	tellurium	20 mg/m <sup>3</sup>
7439-88-5	Iridium from Iridium(III) chloride hydrate	51 mg/m <sup>3</sup>
7440-05-3	palladium	66 mg/m <sup>3</sup>
7440-06-4	platinum	33 mg/m <sup>3</sup>
7440-16-6	rhodium	33 mg/m <sup>3</sup>
7440-18-8	Ruthenium from Ruthenium (III) chloride trihydrate	330 mg/m <sup>3</sup>
7440-31-5	tin	67 mg/m <sup>3</sup>
7440-36-0	antimony	13 mg/m <sup>3</sup>
7440-57-5	Gold	5.1 mg/m <sup>3</sup>
7440-58-6	Hafnium from Hafnium(IV) oxychloride hydrate	17 mg/m <sup>3</sup>

 · **PAC-3:**

7647-01-0	hydrochloric acid	100 ppm
7697-37-2	nitric acid	92 ppm
13494-80-9	tellurium	110 mg/m <sup>3</sup>
7439-88-5	Iridium from Iridium(III) chloride hydrate	310 mg/m <sup>3</sup>
7440-05-3	palladium	400 mg/m <sup>3</sup>
7440-06-4	platinum	200 mg/m <sup>3</sup>
7440-16-6	rhodium	200 mg/m <sup>3</sup>
7440-18-8	Ruthenium from Ruthenium (III) chloride trihydrate	2,000 mg/m <sup>3</sup>
7440-31-5	tin	400 mg/m <sup>3</sup>
7440-36-0	antimony	80 mg/m <sup>3</sup>
7440-57-5	Gold	30 mg/m <sup>3</sup>
7440-58-6	Hafnium from Hafnium(IV) oxychloride hydrate	99 mg/m <sup>3</sup>

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## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** No special measures required.
- **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:**

**7647-01-0 hydrochloric acid**

PEL	Ceiling limit value: 7 mg/m <sup>3</sup> , 5 ppm
REL	Ceiling limit value: 7 mg/m <sup>3</sup> , 5 ppm
TLV	Ceiling limit value: 2.98 mg/m <sup>3</sup> , 2 ppm

**7697-37-2 nitric acid**

PEL	Long-term value: 5 mg/m <sup>3</sup> , 2 ppm
REL	Short-term value: 10 mg/m <sup>3</sup> , 4 ppm Long-term value: 5 mg/m <sup>3</sup> , 2 ppm
TLV	Short-term value: 10 mg/m <sup>3</sup> , 4 ppm Long-term value: 5.2 mg/m <sup>3</sup> , 2 ppm

- **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.  
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**

- Nitrile Glove
- Thickness: ≥0.11 mm
- Breakthrough time: > 480 minutes
- **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:**

Form:	Liquid
Color:	Colorless

· Odor:	Odorless
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· Odour Threshold:	Not applicable.
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· pH-value:	<1
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 · **Change in condition**

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

· Flash point:	Not applicable.
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· Flammability (solid, gaseous):	Not applicable.
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· Decomposition temperature:	Not applicable.
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· Auto igniting:	Product is not selfigniting.
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· Danger of explosion:	Product does not present an explosion hazard.
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 · **Explosion limits:**

Lower:	Not applicable.
Upper:	Not applicable.

· Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)
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· Density	1.0 g/mL @ 20°C
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· Relative density	Not applicable.
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· Vapor density	Not applicable.
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· Evaporation rate	Not applicable.
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 · **Solubility in / Miscibility with**

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

Dynamic:	Not applicable.
Kinematic:	Not applicable.

 · **Solvent content:**

Water:	89.0 %
VOC content:	0.00 %

Solids content:	0.0 %
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· Other information	No further relevant information available.
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**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.

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- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

**11 Toxicological information**

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Irritant
- **Carcinogenic categories**

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

7647-01-0 hydrochloric acid

3

**· NTP (National Toxicology Program)**

None of the ingredients is listed.

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

None of the ingredients is listed.

**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 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **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 packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN3264
- **UN proper shipping name**
- **DOT** Corrosive liquid, acidic, inorganic, n.o.s. (Hydrochloric acid, Nitric acid solution)

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· <b>ADR</b> · <b>IMDG, IATA</b>	3264 Corrosive liquid, acidic, inorganic, n.o.s. (Hydrochloric acid, Nitric acid solution) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROCHLORIC ACID, NITRIC ACID SOLUTION)
· <b>Transport hazard class(es)</b> · <b>DOT</b>	
	
· <b>Class</b> · <b>Label</b>	8 Corrosive substances 8
· <b>ADR, IMDG, IATA</b>	
	
· <b>Class</b> · <b>Label</b>	8 Corrosive substances 8
· <b>Packing group</b> · <b>DOT, ADR, IMDG, IATA</b>	II
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b> · <b>Danger code (Kemler):</b> · <b>EMS Number:</b> · <b>Segregation groups</b> · <b>Stowage Category</b> · <b>Stowage Code</b>	Warning: Corrosive substances 80 F-A,S-B Acids B SW2 Clear of living quarters.
· <b>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>Excepted quantities (EQ)</b>	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <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>	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROCHLORIC ACID, NITRIC ACID SOLUTION), 8, II

**15 Regulatory information**

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

 · **Section 313 (Specific toxic chemical listings):**

7647-01-0	hydrochloric acid
7697-37-2	nitric acid
7440-36-0	antimony

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· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **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.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

7647-01-0 hydrochloric acid

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

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

· **Hazard pictograms**



GHS07

· **Signal word** Warning

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

hydrochloric acid

· **Hazard statements**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

· **Precautionary statements**

Avoid breathing dust/fume/gas/mist/vapors/spray

Wear protective gloves / eye protection / face protection.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Store locked up.

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

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 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.*

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

· **Contact:**

Agilent Technologies, Inc.

800-227-9770

· **Date of preparation / last revision** 09/11/2018 / -

· **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

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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*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)*  
*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*  
*Skin Irrit. 2: Skin corrosion/irritation – Category 2*  
*Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A*  
*STOT SE 3: Specific target organ toxicity (single exposure) – Category 3*

US