



09/04/2015

**Kit Components**

Product code	Description
<b>8500-6940(Kit)</b>	<b>Multi-Element Calibration Standard-2A</b>

Components:

8500-6940	Multi-element Calibration Standard 2A
8500-6940-HG	Multi Element Calibration Standard 2A - HG

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

Printing date 09/04/2015

Reviewed on 09/04/2015

## 1 Identification

- **Product identifier**
- **Product Name:** Multi-element Calibration Standard 2A, Part Number 8500-6940
- **Part Number:** 8500-6940
- **Application of the substance / the mixture**  
Analytical Chemistry  
-2 Bottle Set  
A 100 mL 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**



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

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



GHS05

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
nitric acid
- **Hazard statements**  
Causes severe skin burns and eye damage.
- **Precautionary statements**  
Do not breathe dusts or mists.  
If on skin (or hair): 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.  
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 3  
Fire = 0  
Reactivity = 0

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

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**Product Name: Multi-element Calibration Standard 2A, Part Number 8500-6940**

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**· HMIS-ratings (scale 0 - 4)**

HEALTH	3	Health = 3
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:**

7697-37-2	nitric acid	5.0%
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**· Chemical identification of the substance/preparation**

7429-90-5	aluminium	0.001%
7439-89-6	iron	0.001%
7439-92-1	Lead from Lead Oxide	0.001%
7439-93-2	Lithium from Lithium carbonate	0.001%
7439-95-4	magnesium	0.001%
7439-96-5	manganese	0.001%
7440-02-0	nickel	0.001%
7440-09-7	Potassium from Potassium nitrate	0.001%
7440-17-7	Rubidium from Rubidium nitrate	0.001%
7440-22-4	silver	0.001%
7440-23-5	Sodium from Sodium carbonate	0.001%
7440-24-6	Strontium from Strontium carbonate	0.001%
7440-28-0	Thallium from Thallium nitrate	0.001%
7440-38-2	arsenic	0.001%
7440-39-3	Barium from Barium carbonate	0.001%
7440-41-7	Beryllium from Beryllium Acetate	0.001%
7440-43-9	cadmium (non-pyrophoric)	0.001%
7440-46-2	Cesium from Cesium nitrate	0.001%
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate	0.001%
7440-48-4	cobalt	0.001%
7440-50-8	copper	0.001%
7440-55-3	gallium	0.001%
7440-61-1	Uranium from Uranyl Nitrate Hexahydrate	0.001%
7440-62-2	Vanadium from Ammonium trioxovanadate	0.001%
7440-66-6	zinc powder -zinc dust (stabilized)	0.001%
7440-70-2	Calcium from Calcium carbonate	0.001%
7782-49-2	selenium	0.001%
7732-18-5	water, distilled, conductivity or of similar purity	94.973%

**4 First-aid measures**

- **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.

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**Safety Data Sheet**  
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**Product Name: Multi-element Calibration Standard 2A, Part Number 8500-6940**

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- **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 copious amounts of water and provide fresh air. Immediately call a doctor.
- **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:** CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **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** Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralizing agent.  
Dispose contaminated material as waste according to item 13.  
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.

## 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:**

### 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.

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**Product Name: Multi-element Calibration Standard 2A, Part Number 8500-6940**

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- **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.

- **Breathing equipment:**

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**

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

**9 Physical and chemical properties**

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

**Form:** Liquid

**Color:** Colorless

- **Odor:** Odorless

- **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.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

**Lower:** Not applicable.

**Upper:** Not applicable.

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**Safety Data Sheet**  
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**Product Name: Multi-element Calibration Standard 2A, Part Number 8500-6940**

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· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg)
· <b>Density</b>	1.0 g/mL @ 20 °C
· <b>Relative density</b>	Not applicable.
· <b>Vapour density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with Water:</b>	Miscible
· <b>Partition coefficient (n-octanol/water):</b>	Not applicable.
· <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>	95.0 %
· <b>Other information</b>	No further relevant information available.

**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.
- **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:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
 The product shows the following dangers according to internally approved calculation methods for preparations:  
 Corrosive  
 Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Carcinogenic categories**

· <b>IARC (International Agency for Research on Cancer)</b>		
7439-92-1	Lead from Lead Oxide	2B
7440-02-0	nickel	1
7440-38-2	arsenic	1
7440-41-7	Beryllium from Beryllium Acetate	1
7440-43-9	cadmium (non-pyrophoric)	1
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate	3
7440-48-4	cobalt	2B
7782-49-2	selenium	3

· <b>NTP (National Toxicology Program)</b>		
7439-92-1	Lead from Lead Oxide	R
7440-02-0	nickel	R
7440-38-2	arsenic	K

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**Product Name: Multi-element Calibration Standard 2A, Part Number 8500-6940**

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7440-41-7	Beryllium from Beryllium Acetate	K
7440-43-9	cadmium (non-pyrophoric)	K
7782-49-2	selenium	R
· <b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>		
7440-38-2	arsenic	
7440-43-9	cadmium (non-pyrophoric)	


## 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 2 (Self-assessment): hazardous for water  
Do not allow product to reach ground water, water course or sewage system.  
Must not reach bodies of water or drainage ditch undiluted or unneutralized.  
Danger to drinking water if even small quantities leak into the ground.
- **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

· <b>UN-Number</b>	
· <b>DOT, ADR, IMDG, IATA</b>	UN3264
· <b>UN proper shipping name</b>	
· <b>DOT</b>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution)
· <b>ADR</b>	3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution)
· <b>IMDG, IATA</b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
· <b>Transport hazard class(es)</b>	
· <b>DOT</b>	
	
· <b>Class</b>	8 Corrosive substances

(Contd. on page 7)


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**Product Name: Multi-element Calibration Standard 2A, Part Number 8500-6940**

(Contd. of page 6)

· <b>Label</b>	8
· <b>ADR, IMDG, IATA</b>	
	
· <b>Class</b>	8 Corrosive substances
· <b>Label</b>	8
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	III
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b>	Warning: Corrosive substances
· <b>Danger code (Kemler):</b>	80
· <b>EMS Number:</b>	F-A,S-B
· <b>Segregation groups</b>	Acids
· <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: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>IMDG</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>UN "Model Regulation":</b>	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION), 8, III, (E)

**15 Regulatory information**

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

**Section 355 (extremely hazardous substances):**

7697-37-2 nitric acid

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

7697-37-2 nitric acid

7429-90-5 aluminium

7439-92-1 Lead from Lead Oxide

7439-93-2 Lithium from Lithium carbonate

7439-96-5 manganese

7440-02-0 nickel

7440-22-4 silver

7440-28-0 Thallium from Thallium nitrate

7440-38-2 arsenic

7440-39-3 Barium from Barium carbonate

7440-41-7 Beryllium from Beryllium Acetate

7440-43-9 cadmium (non-pyrophoric)

7440-47-3 Chromium from Chromium(III) nitrate nonahydrate

(Contd. on page 8)



**Safety Data Sheet**  
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**Product Name: Multi-element Calibration Standard 2A, Part Number 8500-6940**

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7440-48-4	cobalt
7440-50-8	copper

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

All ingredients are listed.

**· Proposition 65**
**· Chemicals known to cause cancer:**

7439-92-1	Lead from Lead Oxide
7440-02-0	nickel
7440-38-2	arsenic
7440-41-7	Beryllium from Beryllium Acetate
7440-43-9	cadmium (non-pyrophoric)
7440-48-4	cobalt

**· Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

**· Chemicals known to cause reproductive toxicity for males:**

7440-43-9	cadmium (non-pyrophoric)
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**· Chemicals known to cause developmental toxicity:**

7439-93-2	Lithium from Lithium carbonate
7440-43-9	cadmium (non-pyrophoric)

**· Carcinogenic categories**
**· EPA (Environmental Protection Agency)**

7439-92-1	Lead from Lead Oxide	B2
7439-96-5	manganese	D
7440-22-4	silver	D
7440-38-2	arsenic	A
7440-39-3	Barium from Barium carbonate	D, CBD(inh), NL(oral)
7440-41-7	Beryllium from Beryllium Acetate	B1, K/L(inh), CBD(oral)
7440-43-9	cadmium (non-pyrophoric)	B1
7440-50-8	copper	D
7440-66-6	zinc powder -zinc dust (stabilized)	D, I, II
7782-49-2	selenium	D

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

7429-90-5	aluminium	A4
7439-92-1	Lead from Lead Oxide	A3
7440-02-0	nickel	A5
7440-38-2	arsenic	A1
7440-39-3	Barium from Barium carbonate	A4
7440-43-9	cadmium (non-pyrophoric)	A2
7440-48-4	cobalt	A3
7440-61-1	Uranium from Uranyl Nitrate Hexahydrate	A1

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

7440-02-0	nickel
7440-38-2	arsenic
7440-43-9	cadmium (non-pyrophoric)
7440-61-1	Uranium from Uranyl Nitrate Hexahydrate

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

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**Product Name: Multi-element Calibration Standard 2A, Part Number 8500-6940**

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**Hazard pictograms**

GHS05

**Signal word** Danger**Hazard-determining components of labeling:**  
nitric acid**Hazard statements**

Causes severe skin burns and eye damage.

**Precautionary statements**

Do not breathe dusts or mists.

If on skin (or hair): 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.

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** 09/04/2015 / -**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

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)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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

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

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

Printing date 09/04/2015

Reviewed on 09/04/2015

## 1 Identification

- **Product identifier**
- **Product Name:** Multi Element Calibration Standard 2A - HG, Part Number 8500-6940-HG
- **Part Number:** 8500-6940-HG
- **Application of the substance / the mixture**  
Analytical Chemistry  
-2 Bottle Set  
A 100 mL 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**



GHS05 Corrosion

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

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



GHS05

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
nitric acid
- **Hazard statements**  
Causes severe skin burns and eye damage.
- **Precautionary statements**  
Do not breathe dusts or mists.  
If on skin (or hair): 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.  
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 3  
Fire = 0  
Reactivity = 0

(Contd. on page 2)

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

Printing date 09/04/2015

Reviewed on 09/04/2015

**Product Name: Multi Element Calibration Standard 2A - HG, Part Number 8500-6940-HG**

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 · **HMIS-ratings (scale 0 - 4)**

HEALTH	3	Health = 3
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:**

7697-37-2	nitric acid	5.0%
· <b>Chemical identification of the substance/preparation</b>		
7439-97-6	mercury	0.001%
7732-18-5	water, distilled, conductivity or of similar purity	94.999%

**4 First-aid measures**

- **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 copious amounts of water and provide fresh air. Immediately call a doctor.
- **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:** CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **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** 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:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralizing agent.  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.

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**Product Name: Multi Element Calibration Standard 2A - HG, Part Number 8500-6940-HG**

See Section 13 for disposal information.

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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:**

**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.
- **Breathing equipment:**  
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**

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.

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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

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

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

· <b>Flash point:</b>	Not applicable.
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· <b>Flammability (solid, gaseous):</b>	Not applicable.
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 · **Ignition temperature:**

Decomposition temperature:	Not applicable.
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· <b>Auto igniting:</b>	Product is not selfigniting.
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· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
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 · **Explosion limits:**

Lower:	Not applicable.
Upper:	Not applicable.

· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg)
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· <b>Density</b>	1.0 g/mL @ 20 °C
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· <b>Relative density</b>	Not applicable.
---------------------------	-----------------

· <b>Vapour density</b>	Not applicable.
-------------------------	-----------------

· <b>Evaporation rate</b>	Not applicable.
---------------------------	-----------------

 · **Solubility in / Miscibility with**

Water:	Miscible
--------	----------

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

 · **Viscosity:**

Dynamic:	Not applicable.
----------	-----------------

Kinematic:	Not applicable.
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 · **Solvent content:**

Organic solvents:	0.0 %
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Water:	95.0 %
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· <b>Other information</b>	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:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Corrosive  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Carcinogenic categories**

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

7439-97-6 mercury

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 2 (Self-assessment): hazardous for water  
Do not allow product to reach ground water, water course or sewage system.  
Must not reach bodies of water or drainage ditch undiluted or unneutralized.  
Danger to drinking water if even small quantities leak into the ground.
- **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.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN3264

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<ul style="list-style-type: none"> <li>· UN proper shipping name</li> <li>· DOT</li> <li>· ADR</li> <li>· IMDG, IATA</li> </ul>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
---	---

- Transport hazard class(es)
- DOT



<ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	8 Corrosive substances 8
--	-----------------------------

- ADR, IMDG, IATA



<ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	8 Corrosive substances 8
--	-----------------------------

- Packing group
- DOT, ADR, IMDG, IATA

III

- Environmental hazards:

Not applicable.

<ul style="list-style-type: none"> <li>· Special precautions for user</li> <li>· Danger code (Kemler):</li> <li>· EMS Number:</li> <li>· Segregation groups</li> </ul>	Warning: Corrosive substances 80 F-A,S-B Acids
--	---

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

- Transport/Additional information:

- ADR
- Excepted quantities (EQ)

Code: E1  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 1000 ml

- IMDG
- Limited quantities (LQ)
- Excepted quantities (EQ)

5L  
 Code: E1  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 1000 ml

- UN "Model Regulation":

UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION), 8, III, (E)

**15 Regulatory information**

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

- Section 355 (extremely hazardous substances):

7697-37-2 | nitric acid

- Section 313 (Specific toxic chemical listings):

7697-37-2 | nitric acid

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7439-97-6	mercury	
· <b>TSCA (Toxic Substances Control Act):</b>		
All ingredients are listed.		
· <b>Proposition 65</b>		
· <b>Chemicals known to cause cancer:</b>		
None of the ingredients is listed.		
· <b>Chemicals known to cause reproductive toxicity for females:</b>		
None of the ingredients is listed.		
· <b>Chemicals known to cause reproductive toxicity for males:</b>		
None of the ingredients is listed.		
· <b>Chemicals known to cause developmental toxicity:</b>		
7439-97-6	mercury	
· <b>Carcinogenic categories</b>		
· <b>EPA (Environmental Protection Agency)</b>		
7439-97-6	mercury	D
· <b>TLV (Threshold Limit Value established by ACGIH)</b>		
7439-97-6	mercury	A4
· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>		
None of the ingredients is listed.		
· <b>GHS label elements</b> The product is classified and labeled according to the Globally Harmonized System (GHS).		
· <b>Hazard pictograms</b>		
		
GHS05		
· <b>Signal word</b> Danger		
· <b>Hazard-determining components of labeling:</b>		
nitric acid		
· <b>Hazard statements</b>		
Causes severe skin burns and eye damage.		
· <b>Precautionary statements</b>		
Do not breathe dusts or mists.		
If on skin (or hair): 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.		
Dispose of contents/container in accordance with local/regional/national/international regulations.		
· <b>Chemical safety assessment:</b> 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** 09/04/2015 / -

· **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  
EINECS: European Inventory of Existing Commercial Chemical Substances

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*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)*  
*PBT: Persistent, Bioaccumulative and Toxic*  
*vPvB: very Persistent and very Bioaccumulative*  
*Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B*  
*Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1*

US