

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 1, Part Number 8500-6944
- **Part Number:** 8500-6944
- **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**



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**
H314 Causes severe skin burns and eye damage.
- **Precautionary statements**
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.
Specific treatment (see on this label).
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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US

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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

7429-91-6	Dysprosium from Didysprosium trioxide	0.001%
7439-91-0	Lanthanum from Lanthanum(III) nitrate hexahydrate	0.001%
7439-94-3	Lutetium from Lutetium (III) Oxide	0.001%
7440-00-8	Neodymium from Neodymium Oxide	0.001%
7440-10-0	Praseodymium from Praseodymium(III,IV) oxide	0.001%
7440-19-9	Samarium from Samarium (III) oxide	0.001%
7440-20-2	Scandium from Scandium oxide	0.001%
7440-27-9	Terbium from Terbium (III,IV) oxide	0.001%
7440-29-1	Thorium from Thorium nitrate hydrate	0.001%
7440-30-4	Thulium from Thulium oxide	0.001%
7440-45-1	cerium	0.001%
7440-52-0	Erbium from Erbium(III) oxide	0.001%
7440-53-1	Europium from Europium(III) oxide	0.001%
7440-54-2	Gadolinium from Digadolinium trioxide	0.001%
7440-60-0	Holmium from Holmium oxide	0.001%
7440-64-4	Ytterbium from Ytterbium (III) oxide	0.001%
7440-65-5	yttrium	0.001%
7732-18-5	water, distilled, conductivity or of similar purity	94.983%

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:** 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.

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- **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.
- **Protective Action Criteria for Chemicals**

 · **PAC-1:**

7697-37-2	nitric acid	0.16 ppm
7429-91-6	Dysprosium from Didysprosium trioxide	30 mg/m ³
7439-91-0	Lanthanum from Lanthanum(III) nitrate hexahydrate	30 mg/m ³
7439-94-3	Lutetium from Lutetium (III) Oxide	30 mg/m ³
7440-00-8	Neodymium from Neodymium Oxide	30 mg/m ³
7440-10-0	Praseodymium from Praseodymium(III,IV) oxide	1.2 mg/m ³
7440-19-9	Samarium from Samarium (III) oxide	30 mg/m ³
7440-20-2	Scandium from Scandium oxide	30 mg/m ³
7440-27-9	Terbium from Terbium (III,IV) oxide	1.2 mg/m ³
7440-29-1	Thorium from Thorium nitrate hydrate	30 mg/m ³
7440-30-4	Thulium from Thulium oxide	30 mg/m ³
7440-45-1	cerium	30 mg/m ³
7440-53-1	Europium from Europium(III) oxide	30 mg/m ³
7440-54-2	Gadolinium from Digadolinium trioxide	30 mg/m ³
7440-60-0	Holmium from Holmium oxide	12 mg/m ³
7440-65-5	yttrium	3 mg/m ³

 · **PAC-2:**

7697-37-2	nitric acid	24 ppm
7429-91-6	Dysprosium from Didysprosium trioxide	330 mg/m ³
7439-91-0	Lanthanum from Lanthanum(III) nitrate hexahydrate	330 mg/m ³
7439-94-3	Lutetium from Lutetium (III) Oxide	330 mg/m ³
7440-00-8	Neodymium from Neodymium Oxide	330 mg/m ³
7440-10-0	Praseodymium from Praseodymium(III,IV) oxide	13 mg/m ³
7440-19-9	Samarium from Samarium (III) oxide	330 mg/m ³
7440-20-2	Scandium from Scandium oxide	330 mg/m ³
7440-27-9	Terbium from Terbium (III,IV) oxide	13 mg/m ³
7440-29-1	Thorium from Thorium nitrate hydrate	330 mg/m ³
7440-30-4	Thulium from Thulium oxide	330 mg/m ³
7440-45-1	cerium	330 mg/m ³
7440-53-1	Europium from Europium(III) oxide	330 mg/m ³
7440-54-2	Gadolinium from Digadolinium trioxide	330 mg/m ³
7440-60-0	Holmium from Holmium oxide	130 mg/m ³
7440-65-5	yttrium	33 mg/m ³

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· PAC-3:		
7697-37-2	nitric acid	92 ppm
7429-91-6	Dysprosium from Didysprosium trioxide	2,000 mg/m ³
7439-91-0	Lanthanum from Lanthanum(III) nitrate hexahydrate	2,000 mg/m ³
7439-94-3	Lutetium from Lutetium (III) Oxide	2,000 mg/m ³
7440-00-8	Neodymium from Neodymium Oxide	2,000 mg/m ³
7440-10-0	Praseodymium from Praseodymium(III,IV) oxide	79 mg/m ³
7440-19-9	Samarium from Samarium (III) oxide	2,000 mg/m ³
7440-20-2	Scandium from Scandium oxide	2,000 mg/m ³
7440-27-9	Terbium from Terbium (III,IV) oxide	79 mg/m ³
7440-29-1	Thorium from Thorium nitrate hydrate	2,000 mg/m ³
7440-30-4	Thulium from Thulium oxide	2,000 mg/m ³
7440-45-1	cerium	2,000 mg/m ³
7440-53-1	Europium from Europium(III) oxide	2,000 mg/m ³
7440-54-2	Gadolinium from Digadolinium trioxide	2,000 mg/m ³
7440-60-0	Holmium from Holmium oxide	790 mg/m ³
7440-65-5	yttrium	200 mg/m ³

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 ³ , 2 ppm
REL	Short-term value: 10 mg/m ³ , 4 ppm Long-term value: 5 mg/m ³ , 2 ppm
TLV	Short-term value: 10 mg/m ³ , 4 ppm Long-term value: 5.2 mg/m ³ , 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.

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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.

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.

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.

Vapor pressure at 20 °C (68 °F): 23 hPa (17.3 mm Hg)

Density 1.0 g/mL @ 20°C

Relative density Not applicable.

Vapor density Not applicable.

Evaporation rate Not applicable.

Solubility in / Miscibility with

Water: Miscible

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

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· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Solvent content:	
Water:	95.0 %
VOC content:	0.00 %
· Solids content:	
	0.0 %
· Other information	
	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**

· IARC (International Agency for Research on Cancer)

7440-29-1	Thorium from Thorium nitrate hydrate	1
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· 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.

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- **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. (Nitric acid solution)
· ADR	3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution)
· IMDG, IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
· Transport hazard class(es)	
· DOT	
	
· Class	8 Corrosive substances
· Label	8
· ADR, IMDG, IATA	
	
· Class	8 Corrosive substances
· Label	8
· Packing group	
· DOT, ADR, IMDG, IATA	III
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Corrosive substances
· Danger code (Kemler):	80
· EMS Number:	F-A,S-B
· Segregation groups	Acids
· Stowage Category	A
· Stowage Code	SW2 Clear of living quarters.
· 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

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<ul style="list-style-type: none"> · 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
<ul style="list-style-type: none"> · UN "Model Regulation": 	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION), 8, III

15 Regulatory information

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

Section 313 (Specific toxic chemical listings):

7697-37-2 nitric acid

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)

None of the ingredients is listed.

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


GHS05

Signal word Danger

Hazard-determining components of labeling:

nitric acid

Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

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.

Specific treatment (see on this label).

Store locked up.

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

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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

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 Corr. 1B: Skin corrosion/irritation – Category 1B

Eye Dam. 1: Serious eye damage/eye irritation – Category 1