

Safety Data Sheet
Menarut 91/155 EC

Printing date 09/24/2015

Reviewed on 09/24/2015

1 Identification

- **Product identifier**
- **Product Name:** Multi-Element Calibration Standard-4, Part Number 8500-6942
- **Part Number:** 8500-6942
- **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
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
- **Information department:** product safety department
- **Emergency telephone number:** CHEMTREC®: 1-800-815-308

2 Hazard(s) identification

- **Classification of the substance or mixture**



Eye Irrit. 2 H319 Causes serious eye 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:**
hydrofluoric acid
- **Hazard statements**
Causes serious eye irritation.
- **Precautionary statements**
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash thoroughly after handling.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
- **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:**

7664-39-3	hydrofluoric acid	Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330;	Skin Corr. 1A, H314	0.2%
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· Chemical identification of the substance/preparation		
7697-37-2	nitric acid ⚠ Ox. Liq. 3, H272; ⚠ Skin Corr. 1A, H314	<0.9%
7723-14-0	Phosphorus from Ammonium dihydrogenorthophosphate	0.001%
7440-32-6	titanium ⚠ Self-heat. 1, H251; ⚠ Water-react. 1, H260	0.001%
7440-21-3	alkali fluorosilicates (NH4) ⚠ Acute Tox. 3, H301; ⚠ Acute Tox. 3, H311; ⚠ Acute Tox. 3, H331	0.001%
7440-33-7	tungsten	0.001%
7440-42-8	Boron from Ammonium tetraborate tetrahydrate ⚠ Skin Irrit. 2, H315; ⚠ Eye Irrit. 2, H319; ⚠ STOT SE 3, H335	0.001%
7440-56-4	Germanium from Ammonium hexafluorogermanate(IV) ⚠ Acute Tox. 3, H331; ⚠ Acute Tox. 4, H302; ⚠ Acute Tox. 4, H312; ⚠ Skin Irrit. 2, H315; ⚠ Eye Irrit. 2, H319; ⚠ STOT SE 3, H335	0.001%
7439-98-7	molybdenum	0.001%
7704-34-9	Sulfur (from Dibenzothiophene) ⚠ Skin Irrit. 2, H315	0.001%
7440-67-7	Zirconium from Zirconium(IV) oxynitrate hydrate ⚠ Ox. Sol. 2, H272; ⚠ Skin Corr. 1B, H314; ⚠ Eye Dam. 1, H318	0.001%
7440-25-7	tantalum	0.001%
7440-03-1	Niobium from Diniobium pentaoxide ⚠ Skin Irrit. 2, H315; ⚠ Eye Irrit. 2, H319; ⚠ STOT SE 3, H335	0.001%
7440-15-5	Rhenium from Ammonium perrhenate ⚠ Ox. Liq. 2, H272; ⚠ Skin Irrit. 2, H315; ⚠ Eye Irrit. 2, H319; ⚠ STOT SE 3, H335	0.001%
7732-18-5	water, distilled, conductivity or of similar purity	98.888%

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

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult 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:** CO₂, 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** Not required.
- **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).
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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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:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **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.
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:**
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

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· Color:	Colorless
· Odor:	Odorless
· Odour Threshold:	Not applicable.
· pH-value:	2
· 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.
· Vapor 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.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Solvent content:	
Organic solvents:	0,0 %
Water:	98,9 %
· 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:** No irritant effect.
 - **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:

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Irritant

· **Carcinogenic categories**

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

None of the ingredients is listed.

· **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. (Hydrofluoric acid, Nitric acid solution)

· **ADR**

3264 Corrosive liquid, acidic, inorganic, n.o.s. (Hydrofluoric acid, Nitric acid solution)

· **IMDG, IATA**

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROFLUORIC ACID, NITRIC ACID SOLUTION)

· **Transport hazard class(es)**

· **DOT**



· **Class**

8 Corrosive substances

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· Label	8
· ADR, IMDG, IATA	
	
· Class	8 Corrosive substances
· Label	8
· Packing group	
· DOT, ADR, IMDG, IATA	III
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Corrosive substances
· Danger code (Kemler):	80
· EMS Number:	F-A,S-B
· Segregation groups	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)	5L
· Excepted quantities (EQ)	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. (HYDROFLUORIC ACID, 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
7664-39-3	hydrofluoric acid
7723-14-0	Phosphorus from Ammonium dihydrogenorthophosphate

Section 313 (Specific toxic chemical listings):

7697-37-2	nitric acid
7664-39-3	hydrofluoric acid
7723-14-0	Phosphorus from Ammonium dihydrogenorthophosphate
7704-34-9	Sulfur (from Dibenzothiophene)

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.

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· 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)

7440-42-8 Boron from Ammonium tetraborate tetrahydrate

I (oral)

· TLV (Threshold Limit Value established by ACGIH)

7439-98-7 molybdenum

A3

· 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:

hydrofluoric acid

· Hazard statements

Causes serious eye irritation.

· Precautionary statements

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

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

Wash thoroughly after handling.

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

If eye irritation persists: Get medical advice/attention.

· 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 Manufacturing GmbH & Co. KG

0800 603 1000

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

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)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 2: Acute toxicity, Hazard Category 2

Acute Tox. 1: Acute toxicity, Hazard Category 1

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

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2