



Agilent Technologies

Kit Name: ICH Q3D/USP 232 Elemental Impurities kit

Kit PN: 5190-9771

Kit Components

Component Part Number	Component Name	Volume or mass/ container	No. of component containers/ kit
5190-9766	ICH/USP Oral Target Elements Standard A: Hg @ 30; As @ 15; Cd, Pb @ 5 µg/mL in 2% HNO ₃	100 mL	1
5190-9767	ICH/USP Oral Target Elements Standard B: Ni @ 200; Ag, Se @ 150; V @ 100; Co @ 50; Tl @ 8 µg/mL in 2% HNO ₃	100 mL	1
5190-9768	ICH/USP Oral Target Elements Standard C: Au, Ir, Os, Pd, Pt, Rh, Ru @ 100 µg/mL in 15% HCl	100 mL	1
5190-9769	Calibration Blank Solution for ICP-OES, MP-AES, and AAS	100 mL	1
5190-9770	Pharma Internal Standard 1: Te @ 25; Sc @ 10; Ge, In, Lu, Bi @ 5 µg/mL in 2% HNO ₃ /tr. HF	100 mL	1

SDSs for each component follow this cover sheet.

Transportation Information

DOT	IATA/ICAO	China
UN3316, Chemical kits, 9, II	UN3316, Chemical kits, 9, II	UN3316, Chemical kits, 9, II

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/19/2020

Reviewed on 02/19/2020

1 Identification

- **Product identifier**
- **Product name: ICH/USP Oral Target Elements Standard A: Hg @ 30; As @ 15; Cd, Pb @ 5 µg/mL in 2% HNO₃ [100ml bottle]**
- **Part number:** 5190-9766
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Agilent Technologies, Inc. Tel: 800-227-9770
5301 Stevens Creek Blvd
Santa Clara, CA 95051,
USA
- **Information department:** e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 Corrosion

Met. Corr.1 H290 May be corrosive to metals.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A 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**



GHS05

- **Signal word** Warning

- **Hazard statements**

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

- **Precautionary statements**

P280 Wear protective gloves / eye protection / face protection.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

P332+P313 If skin irritation occurs: Get medical advice/attention.

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P337+P313 *If eye irritation persists: Get medical advice/attention.*
P406 *Store in corrosive resistant container with a resistant inner liner.*

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



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

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:**
Aqueous solution.
Also contains substances at levels not considered to be hazardous.

- **Dangerous components:**

CAS: 7697-37-2	Nitric acid	<2%
RTECS: QU5775000	Ox. Liq. 2, H272; Met. Corr.1, H290; Skin Corr. 1A, H314	

- **Additional information:**

The concentration of the acid stated in this SDS is calculated as an absolute mass concentration (%w/v). This is less than the acid concentration stated on the product label and COA, which reflects a percent value of the commercially available concentrated aqueous form of the acid.

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Rinse mouth. Do not induce vomiting.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.

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Product name: ICH/USP Oral Target Elements Standard A: Hg @ 30; As @ 15; Cd, Pb @ 5 µg/mL in 2% HNO3 [100ml bottle]

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- **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**
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

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.
- **Methods and material for containment and cleaning up:**
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Absorb liquid components with liquid-binding material.
DO NOT USE SAWDUST.
- **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:**

CAS: 7697-37-2	Nitric acid	0.16 ppm
CAS: 7439-97-6	Mercury	0.15 mg/m ³
CAS: 7440-38-2	Arsenic	1.5 mg/m ³
CAS: 7440-43-9	cadmium	0.10 mg/m ³
CAS: 7439-92-1	Lead	0.15 mg/m ³

· **PAC-2:**

CAS: 7697-37-2	Nitric acid	24 ppm
CAS: 7439-97-6	Mercury	1.7 mg/m ³
CAS: 7440-38-2	Arsenic	17 mg/m ³
CAS: 7440-43-9	cadmium	0.76 mg/m ³
CAS: 7439-92-1	Lead	120 mg/m ³

· **PAC-3:**

CAS: 7697-37-2	Nitric acid	92 ppm
CAS: 7439-97-6	Mercury	8.9 mg/m ³
CAS: 7440-38-2	Arsenic	100 mg/m ³
CAS: 7440-43-9	cadmium	4.7 mg/m ³

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Product name: ICH/USP Oral Target Elements Standard A: Hg @ 30; As @ 15; Cd, Pb @ 5 µg/mL in 2% HNO₃ [100ml bottle]

CAS: 7439-92-1 Lead

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 700 mg/m³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Store in cool, dry place in tightly closed receptacles.
- **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:**
Please refer to the manufacturers certificate for specific storage and transport temperature conditions.
Store only in the original receptacle unless other advice is given on the CoA.
Keep container in a well-ventilated place. Keep away from sources of ignition and heat.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **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:**

CAS: 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.
- **Breathing equipment:**
Not required.
Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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Product name: ICH/USP Oral Target Elements Standard A: Hg @ 30; As @ 15; Cd, Pb @ 5 µg/mL in 2% HNO₃ [100ml bottle]

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The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374



Protective gloves

- **Material of gloves**

- PVC gloves

- Neoprene gloves

- **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
Odor threshold:	Not determined.

- **pH-value:** < 2

- **Change in condition**

Melting point/Melting range:	Not determined.
Boiling point/Boiling range:	100 °C (212 °F)

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not determined.

- **Ignition temperature:** Not determined

- **Decomposition temperature:** Not determined.

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

- **Danger of explosion:** Not determined.

- **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

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

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Product name: ICH/USP Oral Target Elements Standard A: Hg @ 30; As @ 15; Cd, Pb @ 5 µg/mL in 2% HNO₃ [100ml bottle]

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· Density:	<i>Not determined.</i>
· Relative density	<i>Not determined.</i>
· Vapor density	<i>Not determined.</i>
· Evaporation rate	<i>Not determined.</i>
· Solubility in / Miscibility with Water:	<i>Fully miscible.</i>
· Partition coefficient (n-octanol/water):	<i>Not determined.</i>
· Viscosity:	
Dynamic:	<i>Not determined.</i>
Kinematic:	<i>Not determined.</i>
· Solvent content:	
VOC content:	<i>0.00 %</i>
· Other information	<i>No further relevant information available.</i>

10 Stability and reactivity

- **Reactivity**
Stable under normal conditions.
No further relevant information available.
- **Chemical stability** *Stable under normal conditions.*
- **Thermal decomposition / conditions to be avoided:**
Formation of toxic gases is possible during heating or in case of fire.
- **Possibility of hazardous reactions** *No dangerous reactions known.*
- **Conditions to avoid** *Heat.*
- **Incompatible materials:**
Strong oxidizing agents.
Metals.
- **Hazardous decomposition products:** *Formation of toxic gases is possible during heating or in case of fire.*

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.
- **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)		
CAS: 7439-97-6	Mercury	3
CAS: 7440-38-2	Arsenic	1

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Product name: ICH/USP Oral Target Elements Standard A: Hg @ 30; As @ 15; Cd, Pb @ 5
µg/mL in 2% HNO3 [100ml bottle]

(Contd. of page 6)

Table with 2 columns: CAS number and chemical name, and a hazard classification column. Rows include cadmium (I), Lead (2B), Arsenic (K), and cadmium (K, R) under NTP and OSHA-Ca sections.

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:
Not hazardous for water.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
· 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: Dispose in accordance with national regulations.
· Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
· DOT, ADR, IMDG, IATA UN3264
· DOT Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)
· ADR 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)

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Product name: ICH/USP Oral Target Elements Standard A: Hg @ 30; As @ 15; Cd, Pb @ 5 µg/mL in 2% HNO₃ [100ml bottle]

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· **IMDG, IATA** *CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)*

· **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

· **UN "Model Regulation":** *UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), 8, III*

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Sara**

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

CAS: 7697-37-2	Nitric acid
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Product name: ICH/USP Oral Target Elements Standard A: Hg @ 30; As @ 15; Cd, Pb @ 5 µg/mL in 2% HNO3 [100ml bottle]

(Contd. of page 8)

· Section 313 (Specific toxic chemical listings):		
CAS: 7697-37-2	Nitric acid	
CAS: 7439-97-6	Mercury	
CAS: 7440-38-2	Arsenic	
CAS: 7440-43-9	cadmium	
CAS: 7439-92-1	Lead	
· TSCA (Toxic Substances Control Act):		
All components have the value ACTIVE.		
· Hazardous Air Pollutants		
CAS: 7439-92-1	Lead	
· Proposition 65		
· Chemicals known to cause cancer:		
CAS: 7440-38-2	Arsenic	
CAS: 7440-43-9	cadmium	
CAS: 7439-92-1	Lead	
· Chemicals known to cause reproductive toxicity for females:		
CAS: 7439-92-1	Lead	
· Chemicals known to cause reproductive toxicity for males:		
CAS: 7440-43-9	cadmium	
CAS: 7439-92-1	Lead	
· Chemicals known to cause developmental toxicity:		
CAS: 7439-97-6	Mercury	
CAS: 7440-43-9	cadmium	
CAS: 7439-92-1	Lead	
· Carcinogenic categories		
· EPA (Environmental Protection Agency)		
CAS: 7439-97-6	Mercury	D
CAS: 7440-38-2	Arsenic	A
CAS: 7440-43-9	cadmium	B1
CAS: 7439-92-1	Lead	B2
· TLV (Threshold Limit Value established by ACGIH)		
CAS: 7439-97-6	Mercury	A4
CAS: 7440-38-2	Arsenic	A1
CAS: 7440-43-9	cadmium	A2
CAS: 7439-92-1	Lead	A3
· NIOSH-Ca (National Institute for Occupational Safety and Health)		
CAS: 7440-38-2	Arsenic	
CAS: 7440-43-9	cadmium	

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Safety Data Sheet

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Product name: ICH/USP Oral Target Elements Standard A: Hg @ 30; As @ 15; Cd, Pb @ 5 µg/mL in 2% HNO₃ [100ml bottle]

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 · **Hazard pictograms**


GHS05

 · **Signal word** Warning

 · **Hazard statements**
H290 May be corrosive to metals.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

 · **Precautionary statements**
P280 Wear protective gloves / eye protection / face protection.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see on this label).
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P406 Store in corrosive resistant container with a resistant inner liner.

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

16 Other information

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.

 · **Date of preparation / last revision** 02/19/2020 / -

 · **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
Ox. Liq. 2: Oxidizing liquids – Category 2
Met. Corr. 1: Corrosive to metals – Category 1
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

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Safety Data Sheet
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**Product name: ICH/USP Oral Target Elements Standard A: Hg @ 30; As @ 15; Cd, Pb @ 5
µg/mL in 2% HNO₃ [100ml bottle]**

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· Sources

Tables 3.1 and 3.2 from Annex 6 of EC 1272/2008, EC 1907/2006, EH40/2005 as amended 2011, Registry of Toxic Effects of Chemical Substances (RTECS), The Dictionary of Substances and their Effects, 1st Edition, IUCLID.

· Data compared to the previous version altered. All sections have been updated.

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/19/2020

Reviewed on 02/19/2020

1 Identification

- **Product identifier**
- **Product name: ICH/USP Oral Target Elements Standard B: Ni @ 200; Ag, Se @ 150; V @ 100; Co @ 50; Tl @ 8 µg/mL in 2% HNO₃ [100ml bottle]**
- **Part number:** 5190-9767
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Agilent Technologies, Inc. Tel: 800-227-9770
5301 Stevens Creek Blvd
Santa Clara, CA 95051,
USA
- **Information department:** e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 Corrosion

Met. Corr.1 H290 May be corrosive to metals.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A 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**



GHS05

- **Signal word** Warning

- **Hazard statements**

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

- **Precautionary statements**

P280 Wear protective gloves / eye protection / face protection.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

P332+P313 If skin irritation occurs: Get medical advice/attention.

(Contd. on page 2)



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Product name: ICH/USP Oral Target Elements Standard B: Ni @ 200; Ag, Se @ 150; V @ 100; Co @ 50; Tl @ 8 µg/mL in 2% HNO3 [100ml bottle]

(Contd. of page 1)

P337+P313 *If eye irritation persists: Get medical advice/attention.*
P406 *Store in corrosive resistant container with a resistant inner liner.*

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



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

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:**
Aqueous solution.
Also contains substances at levels not considered to be hazardous.

- **Dangerous components:**

CAS: 7697-37-2	Nitric acid	<2%
RTECS: QU5775000	Ox. Liq. 2, H272; Met. Corr.1, H290; Skin Corr. 1A, H314	

- **Additional information:**

The concentration of the acid stated in this SDS is calculated as an absolute mass concentration (%w/v). This is less than the acid concentration stated on the product label and COA, which reflects a percent value of the commercially available concentrated aqueous form of the acid.

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Rinse mouth. Do not induce vomiting.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.

(Contd. on page 3)

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Product name: ICH/USP Oral Target Elements Standard B: Ni @ 200; Ag, Se @ 150; V @ 100; Co @ 50; Tl @ 8 µg/mL in 2% HNO₃ [100ml bottle]

(Contd. of page 2)

- **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**
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

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.
- **Methods and material for containment and cleaning up:**
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Absorb liquid components with liquid-binding material.
DO NOT USE SAWDUST.
- **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:**

CAS: 7697-37-2	Nitric acid	0.16 ppm
CAS: 7440-02-0	Nickel	4.5 mg/m ³
CAS: 7440-22-4	Silver, powder	0.3 mg/m ³
CAS: 7782-49-2	Selenium	0.6 mg/m ³
CAS: 1314-62-1	vanadium pentoxide	0.64 mg/m ³
CAS: 7440-48-4	Cobalt	0.18 mg/m ³
CAS: 7440-28-0	thallium	0.06 mg/m ³

- **PAC-2:**

CAS: 7697-37-2	Nitric acid	24 ppm
CAS: 7440-02-0	Nickel	50 mg/m ³
CAS: 7440-22-4	Silver, powder	170 mg/m ³
CAS: 7782-49-2	Selenium	6.6 mg/m ³
CAS: 1314-62-1	vanadium pentoxide	7 mg/m ³
CAS: 7440-48-4	Cobalt	2 mg/m ³
CAS: 7440-28-0	thallium	3.3 mg/m ³

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Printing date 02/19/2020

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Product name: ICH/USP Oral Target Elements Standard B: Ni @ 200; Ag, Se @ 150; V @ 100; Co @ 50; Tl @ 8 µg/mL in 2% HNO3 [100ml bottle]

(Contd. of page 3)

Table with 3 columns: CAS number, Name, and Concentration. Rows include Nitric acid (92 ppm), Nickel (99 mg/m³), Silver, powder (990 mg/m³), Selenium (40 mg/m³), vanadium pentoxide (70 mg/m³), Cobalt (20 mg/m³), and thallium (20 mg/m³).

7 Handling and storage

- Handling:
Precautions for safe handling Store in cool, dry place in tightly closed receptacles.
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: Please refer to the manufacturers certificate for specific storage and transport temperature conditions.
Information about storage in one common storage facility: Store away from foodstuffs.
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:

Table with 2 columns: CAS number and Name, and Limit values. Row: CAS: 7697-37-2 Nitric acid. Limit values for PEL, REL, and TLV (Short-term and Long-term).

- 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.

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

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Product name: ICH/USP Oral Target Elements Standard B: Ni @ 200; Ag, Se @ 150; V @ 100; Co @ 50; Tl @ 8 µg/mL in 2% HNO₃ [100ml bottle]

(Contd. of page 4)

· **Breathing equipment:**

Not required.

Use suitable respiratory protective device in case of insufficient ventilation.

· **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374



Protective gloves

· **Material of gloves**

PVC gloves

Neoprene gloves

· **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

· **Odor threshold:** Not determined.

· **pH-value:** < 2

· **Change in condition**

Melting point/Melting range: Not determined.

Not determined.

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

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not determined.

· **Ignition temperature:** Not determined

· **Decomposition temperature:** Not determined.

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

(Contd. on page 6)

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Product name: ICH/USP Oral Target Elements Standard B: Ni @ 200; Ag, Se @ 150; V @ 100; Co @ 50; Tl @ 8 µg/mL in 2% HNO₃ [100ml bottle]

(Contd. of page 5)

· Danger of explosion:	<i>Not determined.</i>
· Explosion limits:	
Lower:	<i>Not determined.</i>
Upper:	<i>Not determined.</i>
· Vapor pressure at 20 °C (68 °F):	<i>23 hPa (17.3 mm Hg)</i>
· Density:	<i>Not determined.</i>
· Relative density	<i>Not determined.</i>
· Vapor density	<i>Not determined.</i>
· Evaporation rate	<i>Not determined.</i>
· Solubility in / Miscibility with Water:	<i>Fully miscible.</i>
· Partition coefficient (n-octanol/water):	<i>Not determined.</i>
· Viscosity:	
Dynamic:	<i>Not determined.</i>
Kinematic:	<i>Not determined.</i>
· Solvent content:	
VOC content:	<i>0.00 %</i>
· Other information	<i>No further relevant information available.</i>

10 Stability and reactivity

- **Reactivity**
Stable under normal conditions.
No further relevant information available.
- **Chemical stability** *Stable under normal conditions.*
- **Thermal decomposition / conditions to be avoided:**
Formation of toxic gases is possible during heating or in case of fire.
- **Possibility of hazardous reactions** *No dangerous reactions known.*
- **Conditions to avoid** *Heat.*
- **Incompatible materials:**
Strong oxidizing agents.
Metals.
- **Hazardous decomposition products:** *Formation of toxic gases is possible during heating or in case of fire.*

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**
- CAS: 7440-22-4 Silver, powder**
- Oral LD50 >10,000 mg/kg (mouse)
- **Primary irritant effect:**
- **on the skin:** *Irritant to skin and mucous membranes.*

(Contd. on page 7)

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Printing date 02/19/2020

Reviewed on 02/19/2020

Product name: ICH/USP Oral Target Elements Standard B: Ni @ 200; Ag, Se @ 150; V @ 100; Co @ 50; Tl @ 8 µg/mL in 2% HNO₃ [100ml bottle]

(Contd. of page 6)

- **on the eye:** Irritating effect.

- **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)**

CAS: 7440-02-0	Nickel	2B
CAS: 7782-49-2	Selenium	3
CAS: 1314-62-1	vanadium pentoxide	2B
CAS: 7440-48-4	Cobalt	2B

- **NTP (National Toxicology Program)**

CAS: 7440-02-0	Nickel	R
CAS: 7440-48-4	Cobalt	R

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

None of the ingredients is listed.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

CAS: 7440-22-4 Silver, powder

LC50/24	0.015 mg/L (crustacean)
EC50/72h	0.00198 mg/l (Algae)
LC50/96 h	0.00807 mg/l (fish)

- **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:**

Not hazardous for water.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

- **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.

(Contd. on page 8)

Safety Data Sheet

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Product name: ICH/USP Oral Target Elements Standard B: Ni @ 200; Ag, Se @ 150; V @ 100; Co @ 50; Tl @ 8 µg/mL in 2% HNO₃ [100ml bottle]

(Contd. of page 7)

- **Uncleaned packagings:**
- **Recommendation:** *Dispose in accordance with national regulations.*
- **Recommended cleansing agent:** *Water, if necessary with cleansing agents.*

14 Transport information

· UN-Number	UN3264
· DOT, ADR, IMDG, IATA	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)
· DOT	3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
· ADR	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
· IMDG, IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)

· **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.*

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acc. to OSHA HCS

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Reviewed on 02/19/2020

Product name: ICH/USP Oral Target Elements Standard B: Ni @ 200; Ag, Se @ 150; V @ 100; Co @ 50; Tl @ 8 µg/mL in 2% HNO₃ [100ml bottle]

(Contd. of page 8)

· 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

· UN "Model Regulation":

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

15 Regulatory information

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

· Sara

· Section 355 (extremely hazardous substances):

CAS: 7697-37-2 Nitric acid

CAS: 1314-62-1 vanadium pentoxide

· Section 313 (Specific toxic chemical listings):

CAS: 7697-37-2 Nitric acid

CAS: 7440-02-0 Nickel

CAS: 7440-22-4 Silver, powder

CAS: 7782-49-2 Selenium

CAS: 1314-62-1 vanadium pentoxide

CAS: 7440-48-4 Cobalt

CAS: 7440-28-0 thallium

· TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

· Hazardous Air Pollutants

CAS: 7440-48-4 Cobalt

· Proposition 65

· Chemicals known to cause cancer:

CAS: 7440-02-0 Nickel

CAS: 1314-62-1 vanadium pentoxide

CAS: 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:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

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Product name: ICH/USP Oral Target Elements Standard B: Ni @ 200; Ag, Se @ 150; V @ 100; Co @ 50; Tl @ 8 µg/mL in 2% HNO₃ [100ml bottle]

(Contd. of page 9)

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

CAS: 7440-22-4	Silver, powder	D
CAS: 7782-49-2	Selenium	D

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

CAS: 7440-02-0	Nickel	A5
CAS: 1314-62-1	vanadium pentoxide	A3
CAS: 7440-48-4	Cobalt	A3

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

CAS: 7440-02-0	Nickel	
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· **Hazard pictograms**



GHS05

· **Signal word** Warning

· **Hazard statements**

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

· **Precautionary statements**

P280 Wear protective gloves / eye protection / face protection.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P406 Store in corrosive resistant container with a resistant inner liner.

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

16 Other information

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.

· **Date of preparation / last revision** 02/19/2020 / -

· **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)

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Product name: ICH/USP Oral Target Elements Standard B: Ni @ 200; Ag, Se @ 150; V @ 100; Co @ 50; Tl @ 8 µg/mL in 2% HNO₃ [100ml bottle]

(Contd. of page 10)

*HMIS: Hazardous Materials Identification System (USA)**VOC: Volatile Organic Compounds (USA, EU)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**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**Ox. Liq. 2: Oxidizing liquids – Category 2**Met. Corr.1: Corrosive to metals – Category 1**Skin Corr. 1A: Skin corrosion/irritation – Category 1A**Skin Irrit. 2: Skin corrosion/irritation – Category 2**Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A***· Sources**

Tables 3.1 and 3.2 from Annex 6 of EC 1272/2008, EC 1907/2006, EH40/2005 as amended 2011, Registry of Toxic Effects of Chemical Substances (RTECS), The Dictionary of Substances and their Effects, 1st Edition, IUCLID.

- **Data compared to the previous version altered.** All sections have been updated.

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/01/2020

Reviewed on 06/01/2020

1 Identification

- **Product identifier**
- **Product name: ICH/USP Oral Target Elements Standard C: Au, Ir, Os, Pd, Pt, Rh, Ru @ 100 µg/mL in 15% HCl [100ml bottle]**
- **Part number:** 5190-9768
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc. Tel: 800-227-9770
 5301 Stevens Creek Blvd
 Santa Clara, CA 95051,
 USA
- **Information department:** e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 Corrosion

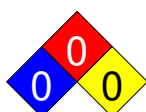
Met. Corr.1 H290 May be corrosive to metals.

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



GHS05

- **Signal word** Warning
- **Hazard statements**
 H290 May be corrosive to metals.
- **Precautionary statements**
 P234 Keep only in original container.
 P390 Absorb spillage to prevent material damage.
 P406 Store in corrosive resistant container with a resistant inner liner.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0
 Fire = 0
 Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



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

(Contd. on page 2)



Safety Data Sheet
acc. to OSHA HCS

Printing date 06/01/2020

Reviewed on 06/01/2020

Product name: ICH/USP Oral Target Elements Standard C: Au, Ir, Os, Pd, Pt, Rh, Ru @ 100 µg/mL in 15 % HCl [100ml bottle]

(Contd. of page 1)

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

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:**
Aqueous solution.
Also contains substances at levels not considered to be hazardous.

· **Dangerous components:**

CAS: 7647-01-0	Hydrochloric acid	<10%
RTECS: MW 9620000	☞ Skin Corr. 1B, H314; Eye Dam. 1, H318; ⚠ STOT SE 3, H335	

- **Additional information:**
The concentration of the acid stated in this SDS is calculated as an absolute mass concentration (%w/v). This is less than the acid concentration stated on the product label and COA, which reflects a percent value of the commercially available concentrated aqueous form of the acid.

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** Rinse mouth. 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**
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

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.

(Contd. on page 3)

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Reviewed on 06/01/2020

Product name: ICH/USP Oral Target Elements Standard C: Au, Ir, Os, Pd, Pt, Rh, Ru @ 100 µg/mL in 15% HCl [100ml bottle]

(Contd. of page 2)

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.

· **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:**

CAS: 7647-01-0	Hydrochloric acid	1.8 ppm
CAS: 7440-57-5	Gold	0.46 mg/m ³
CAS: 7440-05-3	Palladium	6 mg/m ³
CAS: 7440-06-4	Platinum	3 mg/m ³

· **PAC-2:**

CAS: 7647-01-0	Hydrochloric acid	22 ppm
CAS: 7440-57-5	Gold	5.1 mg/m ³
CAS: 7440-05-3	Palladium	66 mg/m ³
CAS: 7440-06-4	Platinum	33 mg/m ³

· **PAC-3:**

CAS: 7647-01-0	Hydrochloric acid	100 ppm
CAS: 7440-57-5	Gold	30 mg/m ³
CAS: 7440-05-3	Palladium	400 mg/m ³
CAS: 7440-06-4	Platinum	200 mg/m ³

7 Handling and storage

· **Handling:**

· **Precautions for safe handling** Store in cool, dry place in tightly closed receptacles.

· **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:**

Please refer to the manufacturers certificate for specific storage and transport temperature conditions.

Store only in the original receptacle unless other advice is given on the CoA.

Keep container in a well-ventilated place. Keep away from sources of ignition and heat.

· **Information about storage in one common storage facility:** Store away from foodstuffs.

· **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.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/01/2020

Reviewed on 06/01/2020

Product name: ICH/USP Oral Target Elements Standard C: Au, Ir, Os, Pd, Pt, Rh, Ru @ 100 µg/mL in 15% HCl [100ml bottle]

(Contd. of page 3)

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

CAS: 7647-01-0 Hydrochloric acid

PEL Ceiling limit value: 7 mg/m³, 5 ppm

REL Ceiling limit value: 7 mg/m³, 5 ppm

TLV Ceiling limit value: 2.98 mg/m³, 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:**

Not required.

Use suitable respiratory protective device in case of insufficient ventilation.

- **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374



Protective gloves

- **Material of gloves**

PVC gloves

Neoprene gloves

- **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

(Contd. on page 5)

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acc. to OSHA HCS

Printing date 06/01/2020

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Product name: ICH/USP Oral Target Elements Standard C: Au, Ir, Os, Pd, Pt, Rh, Ru @ 100 µg/mL in 15% HCl [100ml bottle]

(Contd. of page 4)

Color:	Colorless
· Odor:	Odorless
· Odor threshold:	Not determined.
· pH-value:	< 2
· Change in condition	
Melting point/Melting range:	Not determined. Not determined.
Boiling point/Boiling range:	100 °C (212 °F)
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not determined.
· Ignition temperature:	Not determined
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Not determined.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)
· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
VOC content:	0.00 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
Stable under normal conditions.
No further relevant information available.
- **Chemical stability** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:**
Formation of toxic gases is possible during heating or in case of fire.
- **Possibility of hazardous reactions** No dangerous reactions known.

(Contd. on page 6)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/01/2020

Reviewed on 06/01/2020

Product name: ICH/USP Oral Target Elements Standard C: Au, Ir, Os, Pd, Pt, Rh, Ru @ 100 µg/mL in 15% HCl [100ml bottle]

(Contd. of page 5)

- **Conditions to avoid Heat.**
- **Incompatible materials:**
Strong oxidizing agents.
Metals.
- **Hazardous decomposition products:** Formation of toxic gases is possible during heating or in case of fire.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Based on available data, the classification criteria are not met.
- **on the eye:** Based on available data, the classification criteria are not met.
- **Sensitization:** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
- **Carcinogenic categories**

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

CAS: 7647-01-0	Hydrochloric acid	3
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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 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.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

US

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/01/2020

Reviewed on 06/01/2020

Product name: ICH/USP Oral Target Elements Standard C: Au, Ir, Os, Pd, Pt, Rh, Ru @ 100 µg/mL in 15% HCl [100ml bottle]

(Contd. of page 6)

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:** Dispose in accordance with national regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN1789
- **DOT** Hydrochloric acid solution
- **ADR** 1789 HYDROCHLORIC ACID solution
- **IMDG, IATA** HYDROCHLORIC 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** II

- **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.

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/01/2020

Reviewed on 06/01/2020

Product name: ICH/USP Oral Target Elements Standard C: Au, Ir, Os, Pd, Pt, Rh, Ru @ 100 µg/mL in 15% HCl [100ml bottle]

(Contd. of page 7)

· Transport/Additional information:

· ADR

· Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

· UN "Model Regulation":

UN 1789 HYDROCHLORIC ACID SOLUTION, 8, II

15 Regulatory information

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

· Sara

· Section 355 (extremely hazardous substances):

CAS: 7647-01-0 Hydrochloric acid

· Section 313 (Specific toxic chemical listings):

CAS: 7647-01-0 Hydrochloric acid

· TSCA (Toxic Substances Control Act):

CAS: 7647-01-0	Hydrochloric acid	ACTIVE
CAS: 7440-57-5	Gold	ACTIVE
CAS: 12125-08-5	Diammonium hexachloroosmate	ACTIVE
CAS: 7440-05-3	Palladium	ACTIVE
CAS: 7440-06-4	Platinum	ACTIVE
CAS: 7732-18-5	Water	ACTIVE

· Hazardous Air Pollutants

CAS: 7647-01-0 Hydrochloric acid

· 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)

CAS: 7647-01-0 Hydrochloric acid

A4

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/01/2020

Reviewed on 06/01/2020

Product name: ICH/USP Oral Target Elements Standard C: Au, Ir, Os, Pd, Pt, Rh, Ru @ 100 µg/mL in 15% HCl [100ml bottle]

(Contd. of page 8)

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

None of the ingredients is listed.

 · **Hazard pictograms**


GHS05

 · **Signal word** Warning

 · **Hazard statements**

H290 May be corrosive to metals.

 · **Precautionary statements**

P234 Keep only in original container.

P390 Absorb spillage to prevent material damage.

P406 Store in corrosive resistant container with a resistant inner liner.

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

16 Other information

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.

 · **Date of preparation / last revision** 06/01/2020 / 1

 · **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

Met. Corr.1: Corrosive to metals – Category 1

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

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

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

 · **Sources**

Tables 3.1 and 3.2 from Annex 6 of EC 1272/2008, EC 1907/2006, EH40/2005 as amended 2011, Registry of Toxic Effects of Chemical Substances (RTECS), The Dictionary of Substances and their Effects, 1st Edition, IUCLID.

 · **Data compared to the previous version altered.** All sections have been updated.

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/09/2020

Reviewed on 03/09/2020

1 Identification· **Product identifier**· **Product name:** ICH/USP Oral Target Elements Standard D: Cr @ 11,000; Sn @ 6000; Cu, Mo @ 3000; Ba @ 1400; Sb @ 1200; Li @ 550 µg/mL in 5% HNO₃/tr. HF [100ml bottle]· **Part number:** 5190-9769· **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use· **Details of the supplier of the safety data sheet**· **Manufacturer/Supplier:**Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051,
USA

Tel: 800-227-9770

· **Information department:** e-mail: pdl-msds_author@agilent.com· **Emergency telephone number:** CHEMTREC®: 1-800-424-9300**2 Hazard(s) identification**· **Classification of the substance or mixture**

GHS05 Corrosion

Met. Corr.1 H290 May be corrosive to metals.

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Aquatic Acute 3 H402 Harmful to aquatic life.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

· **Label elements**· **GHS label elements**

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

· **Hazard pictograms**

GHS05 GHS07

· **Signal word** Danger· **Hazard-determining components of labeling:**

Nitric acid

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/09/2020

Reviewed on 03/09/2020

Product name: ICH/USP Oral Target Elements Standard D: Cr @ 11,000; Sn @ 6000; Cu, Mo @ 3000; Ba @ 1400; Sb @ 1200; Li @ 550 µg/mL in 5% HNO₃/tr. HF [100ml bottle]

(Contd. of page 1)

hydrofluoric acid

- **Hazard statements**

- H290 *May be corrosive to metals.*
 H302+H312+H332 *Harmful if swallowed, in contact with skin or if inhaled.*
 H315 *Causes skin irritation.*
 H318 *Causes serious eye damage.*
 H402 *Harmful to aquatic life.*
 H412 *Harmful to aquatic life with long lasting effects.*

- **Precautionary statements**

- P261 *Avoid breathing dust/fume/gas/mist/vapors/spray*
 P280 *Wear protective gloves/protective clothing/eye protection/face protection.*
 P305+P351+P338 *If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
 P310 *Immediately call a poison center/doctor.*
 P321 *Specific treatment (see on this label).*
 P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Description:** Also contains substances at levels not considered to be hazardous.

- **Dangerous components:**

CAS: 7697-37-2 RTECS: QU5775000	Nitric acid ⚠ Ox. Liq. 2, H272; ⚠ Met. Corr.1, H290; Skin Corr. 1A, H314	<5%
CAS: 7789-02-8 RTECS: GB6300000	Chromium (III) nitrate nonahydrate ⚠ Ox. Sol. 2, H272; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319	<2%
CAS: 7664-39-3 RTECS: MW7875000	hydrofluoric acid ⚠ Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; ⚠ Skin Corr. 1A, H314	<1%

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/09/2020

Reviewed on 03/09/2020


Product name: ICH/USP Oral Target Elements Standard D: Cr @ 11,000; Sn @ 6000; Cu, Mo @ 3000; Ba @ 1400; Sb @ 1200; Li @ 550 µg/mL in 5% HNO₃/tr. HF [100ml bottle]

CAS: 7440-50-8

Copper

(Contd. of page 2)

RTECS: GL 5325000

 Aquatic Acute 1, H400; Aquatic Chronic 1, H410

<1%

· **Additional information:**

The concentration of the acid stated in this SDS is calculated as an absolute mass concentration (%w/v). This is less than the acid concentration stated on the product label and COA, which reflects a percent value of the commercially available concentrated aqueous form of the acid.

4 First-aid measures

· **Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

Seek medical treatment.

· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

Seek medical treatment.

If skin irritation continues, consult a doctor.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:**

Rinse mouth. Do not induce vomiting.

Seek medical treatment.

· **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**

Formation of toxic gases is possible during heating or in case of fire.

· **Advice for firefighters**

· **Protective equipment:**

Mouth respiratory protective device.

Wear self-contained respiratory protective device.

-US

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/09/2020

Reviewed on 03/09/2020

Product name: ICH/USP Oral Target Elements Standard D: Cr @ 11,000; Sn @ 6000; Cu, Mo @ 3000; Ba @ 1400; Sb @ 1200; Li @ 550 µg/mL in 5% HNO₃/tr. HF [100ml bottle]

(Contd. of page 3)

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

· **Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

· **Methods and material for containment and cleaning up:**

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Absorb liquid components with liquid-binding material.

DO NOT USE SAWDUST.

· **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:**

CAS: 7697-37-2	Nitric acid	0.16 ppm
CAS: 7664-39-3	hydrofluoric acid	1.0 ppm
CAS: 7440-31-5	Tin	6 mg/m ³
CAS: 7440-50-8	Copper	3 mg/m ³
CAS: 7439-98-7	Molybdenum	30 mg/m ³
CAS: 10022-31-8	Barium nitrate	2.9 mg/m ³
CAS: 7440-36-0	Antimony	1.5 mg/m ³
CAS: 554-13-2	Lithium carbonate	3.1 mg/m ³

· **PAC-2:**

CAS: 7697-37-2	Nitric acid	24 ppm
CAS: 7664-39-3	hydrofluoric acid	24 ppm
CAS: 7440-31-5	Tin	67 mg/m ³
CAS: 7440-50-8	Copper	33 mg/m ³
CAS: 7439-98-7	Molybdenum	330 mg/m ³
CAS: 10022-31-8	Barium nitrate	350 mg/m ³
CAS: 7440-36-0	Antimony	13 mg/m ³
CAS: 554-13-2	Lithium carbonate	34 mg/m ³

· **PAC-3:**

CAS: 7697-37-2	Nitric acid	92 ppm
CAS: 7664-39-3	hydrofluoric acid	44 ppm
CAS: 7440-31-5	Tin	400 mg/m ³
CAS: 7440-50-8	Copper	200 mg/m ³

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/09/2020

Reviewed on 03/09/2020

Product name: ICH/USP Oral Target Elements Standard D: Cr @ 11,000; Sn @ 6000; Cu, Mo @ 3000; Ba @ 1400; Sb @ 1200; Li @ 550 µg/mL in 5% HNO₃/tr. HF [100ml bottle]

CAS: 7439-98-7	Molybdenum	(Contd. of page 4) 2,000 mg/m ³
CAS: 10022-31-8	Barium nitrate	2,100 mg/m ³
CAS: 7440-36-0	Antimony	80 mg/m ³
CAS: 554-13-2	Lithium carbonate	210 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
*Ensure good ventilation/exhaustion at the workplace.
 Store in cool, dry place in tightly closed receptacles.
 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:**
*Please refer to the manufacturers certificate for specific storage and transport temperature conditions.
 Store only in the original receptacle unless other advice is given on the CoA.
 Keep container in a well-ventilated place. Keep away from sources of ignition and heat.*
- **Information about storage in one common storage facility:** *Store away from foodstuffs.*
- **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:**

CAS: 7697-37-2 Nitric acid

<i>PEL</i>	<i>Long-term value: 5 mg/m³, 2 ppm</i>
<i>REL</i>	<i>Short-term value: 10 mg/m³, 4 ppm Long-term value: 5 mg/m³, 2 ppm</i>
<i>TLV</i>	<i>Short-term value: 10 mg/m³, 4 ppm Long-term value: 5.2 mg/m³, 2 ppm</i>

CAS: 7664-39-3 hydrofluoric acid

<i>PEL</i>	<i>Long-term value: 3 ppm as F</i>
<i>REL</i>	<i>Long-term value: 2.5 mg/m³, 3 ppm Ceiling limit value: 5 mg/m³, 6 ppm 15-min, as F</i>
<i>TLV</i>	<i>Long-term value: 0.41 mg/m³, 0.5 ppm Ceiling limit value: 1.64 mg/m³, 2 ppm as F; Skin, BEI</i>

(Contd. on page 6)



Safety Data Sheet
acc. to OSHA HCS

Printing date 03/09/2020

Reviewed on 03/09/2020

Product name: ICH/USP Oral Target Elements Standard D: Cr @ 11,000; Sn @ 6000; Cu, Mo @ 3000; Ba @ 1400; Sb @ 1200; Li @ 550 µg/mL in 5% HNO3/tr. HF [100ml bottle]

(Contd. of page 5)

CAS: 7440-50-8 Copper

Table with 2 columns: PEL, REL, TLV and their corresponding long-term values for Copper dusts and mists/fume.

Ingredients with biological limit values:

CAS: 7664-39-3 hydrofluoric acid

Table with 2 columns: BEI and its corresponding medium, time, and parameter for hydrofluoric acid.

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 skin.
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. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374



Protective gloves

Material of gloves

- PVC gloves
Neoprene gloves

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.

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/09/2020

Reviewed on 03/09/2020

Product name: ICH/USP Oral Target Elements Standard D: Cr @ 11,000; Sn @ 6000; Cu, Mo @ 3000; Ba @ 1400; Sb @ 1200; Li @ 550 µg/mL in 5% HNO₃/tr. HF [100ml bottle]

· **Eye protection:**

(Contd. of page 6)



Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**

Form:	Liquid
Color:	Colorless
Odor:	Odorless
Odor threshold:	Not determined.

· **pH-value:** <2· **Change in condition**

Melting point/Melting range:	Not determined.
Boiling point/Boiling range:	100 °C (212 °F)

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

Lower:	Not determined.
Upper:	Not determined.

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

Water:	Fully miscible.
---------------	-----------------

· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:**

Dynamic:	Not determined.
Kinematic:	Not determined.

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/09/2020

Reviewed on 03/09/2020

Product name: ICH/USP Oral Target Elements Standard D: Cr @ 11,000; Sn @ 6000; Cu, Mo @ 3000; Ba @ 1400; Sb @ 1200; Li @ 550 µg/mL in 5% HNO₃/tr. HF [100ml bottle]

(Contd. of page 7)

- **Solvent content:**
- VOC content:** 0.00 %
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity**
Stable under normal conditions.
No further relevant information available.
- **Chemical stability** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:**
Formation of toxic gases is possible during heating or in case of fire.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** Heat.
- **Incompatible materials:**
Strong oxidizing agents.
Metals.
- **Hazardous decomposition products:** Formation of toxic gases is possible during heating or in case of fire.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

 · **LD/LC50 values that are relevant for classification:**

CAS: 7697-37-2 Nitric acid

Inhalative	LC50/4 h	130 mg/l (rat)
------------	----------	----------------

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
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.

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/09/2020

Reviewed on 03/09/2020

Product name: ICH/USP Oral Target Elements Standard D: Cr @ 11,000; Sn @ 6000; Cu, Mo @ 3000; Ba @ 1400; Sb @ 1200; Li @ 550 µg/mL in 5% HNO₃/tr. HF [100ml bottle]

(Contd. of page 8)

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

· Toxicity

· Aquatic toxicity:

CAS: 7697-37-2 Nitric acid

LC50/48	180 mg/l (crustacean)
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CAS: 7440-50-8 Copper

LC50/48	0.044 mg/l (crustacean)
---------	-------------------------

EC50/48 h	0.02 mg/l (crustacean)
-----------	------------------------

EC50/72h	0.57 mg/l (Algae)
----------	-------------------

LC50/96 h	0.665 mg/l (fish)
-----------	-------------------

· 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.

· Ecotoxicological effects:

· Remark: Harmful to fish

· 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.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Harmful to aquatic organisms

· 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: Dispose in accordance with national regulations.

· Recommended cleansing agent: Water, if necessary with cleansing agents.

US

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/09/2020

Reviewed on 03/09/2020

Product name: ICH/USP Oral Target Elements Standard D: Cr @ 11,000; Sn @ 6000; Cu, Mo @ 3000; Ba @ 1400; Sb @ 1200; Li @ 550 µg/mL in 5% HNO₃/tr. HF [100ml bottle]

(Contd. of page 9)

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, ADR, IMDG, IATA · DOT · ADR · IMDG, IATA 	<p>UN3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Hydrofluoric acid) 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROFLUORIC ACID) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROFLUORIC ACID)</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT 	<p>8 Corrosive substances</p>
<ul style="list-style-type: none"> · Class · Label 	<p>8 8</p>
<ul style="list-style-type: none"> · ADR, IMDG, IATA 	<p>8 Corrosive substances</p>
<ul style="list-style-type: none"> · Class · Label 	<p>8 8</p>
<ul style="list-style-type: none"> · Packing group · DOT, ADR, IMDG, IATA 	<p>III</p>
<ul style="list-style-type: none"> · Environmental hazards: 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups 	<p>Warning: Corrosive substances 80 F-A,S-B Acids</p>
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: 	<p>Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</p>
<ul style="list-style-type: none"> · UN "Model Regulation": 	<p>UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROFLUORIC ACID), 8, III</p>

US

(Contd. on page 11)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/09/2020

Reviewed on 03/09/2020

Product name: ICH/USP Oral Target Elements Standard D: Cr @ 11,000; Sn @ 6000; Cu, Mo @ 3000; Ba @ 1400; Sb @ 1200; Li @ 550 µg/mL in 5% HNO₃/tr. HF [100ml bottle]

(Contd. of page 10)

15 Regulatory information

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

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

CAS: 7697-37-2 Nitric acid

CAS: 7664-39-3 hydrofluoric acid

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

CAS: 7697-37-2 Nitric acid

CAS: 7789-02-8 Chromium (III) nitrate nonahydrate

CAS: 7664-39-3 hydrofluoric acid

CAS: 7440-50-8 Copper

CAS: 10022-31-8 Barium nitrate

CAS: 7440-36-0 Antimony

CAS: 554-13-2 Lithium carbonate

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

CAS: 7697-37-2 Nitric acid

ACTIVE

CAS: 7664-39-3 hydrofluoric acid

ACTIVE

CAS: 7440-31-5 Tin

ACTIVE

CAS: 7440-50-8 Copper

ACTIVE

CAS: 7439-98-7 Molybdenum

ACTIVE

CAS: 10022-31-8 Barium nitrate

ACTIVE

CAS: 7440-36-0 Antimony

ACTIVE

CAS: 554-13-2 Lithium carbonate

ACTIVE

CAS: 7732-18-5 Water

ACTIVE

- **Hazardous Air Pollutants**

CAS: 7664-39-3 hydrofluoric acid

- **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:**

CAS: 554-13-2 Lithium carbonate

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

CAS: 7440-50-8 Copper

D

(Contd. on page 12)

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/09/2020

Reviewed on 03/09/2020

Product name: ICH/USP Oral Target Elements Standard D: Cr @ 11,000; Sn @ 6000; Cu, Mo @ 3000; Ba @ 1400; Sb @ 1200; Li @ 550 µg/mL in 5% HNO₃/tr. HF [100ml bottle]

(Contd. of page 11)

CAS: 10022-31-8	Barium nitrate	D, CBD(<i>inh</i>), NL(<i>oral</i>)
· TLV (Threshold Limit Value established by ACGIH)		
CAS: 7439-98-7	Molybdenum	A3
CAS: 10022-31-8	Barium nitrate	A4
· NIOSH-Ca (National Institute for Occupational Safety and Health)		
None of the ingredients is listed.		

· Hazard pictograms

GHS05 GHS07

· Signal word *Danger***· Hazard-determining components of labeling:**

Nitric acid
hydrofluoric acid

· Hazard statements

H290 *May be corrosive to metals.*
H302+H312+H332 *Harmful if swallowed, in contact with skin or if inhaled.*
H315 *Causes skin irritation.*
H318 *Causes serious eye damage.*
H402 *Harmful to aquatic life.*
H412 *Harmful to aquatic life with long lasting effects.*

· Precautionary statements

P261 *Avoid breathing dust/fume/gas/mist/vapors/spray*
P280 *Wear protective gloves/protective clothing/eye protection/face protection.*
P305+P351+P338 *If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
P310 *Immediately call a poison center/doctor.*
P321 *Specific treatment (see on this label).*
P501 *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

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.

· Date of preparation / last revision 03/09/2020 / 1**· 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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Safety Data Sheet
acc. to OSHA HCS

Printing date 03/09/2020

Reviewed on 03/09/2020

Product name: ICH/USP Oral Target Elements Standard D: Cr @ 11,000; Sn @ 6000; Cu, Mo @ 3000; Ba @ 1400; Sb @ 1200; Li @ 550 µg/mL in 5% HNO₃/tr. HF [100ml bottle]

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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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
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
BEI: Biological Exposure Limit
Ox. Liq. 2: Oxidizing liquids – Category 2
Ox. Sol. 2: Oxidizing solids – Category 2
Met. Corr.1: Corrosive to metals – Category 1
Acute Tox. 2: Acute toxicity – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 1: Acute toxicity – Category 1
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

• Sources

Tables 3.1 and 3.2 from Annex 6 of EC 1272/2008, EC 1907/2006, EH40/2005 as amended 2011, Registry of Toxic Effects of Chemical Substances (RTECS), The Dictionary of Substances and their Effects, 1st Edition, IUCLID.

- **Data compared to the previous version altered.** All sections have been updated.

Safety Data Sheet
acc. to OSHA HCS

Printing date 06/01/2020

Reviewed on 06/01/2020

1 Identification· **Product identifier**· **Product name: Pharma Internal Standard 1**· **Part number:** 5190-9770· **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use· **Details of the supplier of the safety data sheet**· **Manufacturer/Supplier:**Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051,
USA

Tel: 800-227-9770

· **Information department:** e-mail: pdl-msds_author@agilent.com· **Emergency telephone number:** CHEMTREC®: 1-800-424-9300**2 Hazard(s) identification**· **Classification of the substance or mixture**

GHS05 Corrosion

Met. Corr.1 H290 May be corrosive to metals.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A 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**

GHS05 GHS07

· **Signal word** Warning· **Hazard-determining components of labeling:**

hydrofluoric acid

· **Hazard statements**

H290 May be corrosive to metals.

H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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acc. to OSHA HCS

Printing date 06/01/2020

Reviewed on 06/01/2020

Product name: Pharma Internal Standard 1

(Contd. of page 1)

Precautionary statements

- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P321 Specific treatment (see on this label).
 P406 Store in corrosive resistant container with a resistant inner liner.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:
NFPA ratings (scale 0 - 4)

HMIS-ratings (scale 0 - 4)

Other hazards
Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures
Description:

Aqueous solution.

Also contains substances at levels not considered to be hazardous.

Dangerous components:

CAS: 7697-37-2 RTECS: QU5775000	Nitric acid ⚠ Ox. Liq. 2, H272; ⚠ Met. Corr.1, H290; Skin Corr. 1A, H314	<2%
CAS: 7664-39-3 RTECS: MW 7875000	hydrofluoric acid ⚠ Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; ⚠ Skin Corr. 1A, H314	<1%

Additional information:

The concentration of the acid stated in this SDS is calculated as an absolute mass concentration (%w/v). This is less than the acid concentration stated on the product label and COA, which reflects a percent value of the commercially available concentrated aqueous form of the acid.

4 First-aid measures

Description of first aid measures
General information:

Immediately remove any clothing soiled by the product.

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Reviewed on 06/01/2020

Product name: Pharma Internal Standard 1

(Contd. of page 2)

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

Seek medical treatment.

· After skin contact:

Immediately wash with water and soap and rinse thoroughly.

Seek medical treatment.

If skin irritation continues, consult a doctor.

· After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· After swallowing:

Rinse mouth. Do not induce vomiting.

Seek medical treatment.

· 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

Formation of toxic gases is possible during heating or in case of fire.

· Advice for firefighters**· Protective equipment:**

Mouth respiratory protective device.

Wear self-contained respiratory protective device.

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:

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Absorb liquid components with liquid-binding material.

DO NOT USE SAWDUST.

· 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.

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Printing date 06/01/2020

Reviewed on 06/01/2020

Product name: Pharma Internal Standard 1

(Contd. of page 3)

· Protective Action Criteria for Chemicals
· PAC-1:

CAS: 7697-37-2	Nitric acid	0.16 ppm
CAS: 7664-39-3	hydrofluoric acid	1.0 ppm
CAS: 13494-80-9	tellurium	1.8 mg/m ³
CAS: 12060-08-1	Scandium oxide	30 mg/m ³
CAS: 7440-74-6	Indium	0.3 mg/m ³
CAS: 12032-20-1	Lutetium (III) oxide	30 mg/m ³
CAS: 7440-69-9	Bismuth	15 mg/m ³
CAS: 7440-56-4	Germanium	3.2 mg/m ³

· PAC-2:

CAS: 7697-37-2	Nitric acid	24 ppm
CAS: 7664-39-3	hydrofluoric acid	24 ppm
CAS: 13494-80-9	tellurium	20 mg/m ³
CAS: 12060-08-1	Scandium oxide	330 mg/m ³
CAS: 7440-74-6	Indium	3.3 mg/m ³
CAS: 12032-20-1	Lutetium (III) oxide	330 mg/m ³
CAS: 7440-69-9	Bismuth	170 mg/m ³
CAS: 7440-56-4	Germanium	35 mg/m ³

· PAC-3:

CAS: 7697-37-2	Nitric acid	92 ppm
CAS: 7664-39-3	hydrofluoric acid	44 ppm
CAS: 13494-80-9	tellurium	110 mg/m ³
CAS: 12060-08-1	Scandium oxide	2,000 mg/m ³
CAS: 7440-74-6	Indium	20 mg/m ³
CAS: 12032-20-1	Lutetium (III) oxide	2,000 mg/m ³
CAS: 7440-69-9	Bismuth	990 mg/m ³
CAS: 7440-56-4	Germanium	170 mg/m ³

7 Handling and storage

· Handling:
· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Store in cool, dry place in tightly closed receptacles.

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:

Please refer to the manufacturers certificate for specific storage and transport temperature conditions.

Store only in the original receptacle unless other advice is given on the CoA.

Keep container in a well-ventilated place. Keep away from sources of ignition and heat.

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Product name: Pharma Internal Standard 1

(Contd. of page 4)

- Information about storage in one common storage facility: Store away from foodstuffs.
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:

CAS: 7697-37-2 Nitric acid

Table with 2 columns: PEL, REL, TLV and their corresponding limit values for Nitric acid.

CAS: 7664-39-3 hydrofluoric acid

Table with 2 columns: PEL, REL, TLV and their corresponding limit values for hydrofluoric acid.

Ingredients with biological limit values:

CAS: 7664-39-3 hydrofluoric acid

Table with 2 columns: BEI and its corresponding biological limit values for hydrofluoric acid.

Additional information: The lists that were valid during the creation were used as basis.

- Exposure controls
Personal protective equipment:
General protective and hygienic measures:
Breathing equipment:

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Reviewed on 06/01/2020

Product name: Pharma Internal Standard 1

(Contd. of page 5)

· **Protection of hands:**

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374*



Protective gloves

· **Material of gloves**

*PVC gloves
Neoprene gloves*

· **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:	<i>Liquid</i>
· Color:	<i>Colorless</i>
· Odor:	<i>Odorless</i>
· Odor threshold:	<i>Not determined.</i>

· **pH-value:** *<2*

· **Change in condition**

· Melting point/Melting range:	<i>Not determined.</i>
· Boiling point/Boiling range:	<i>Not determined. 100 °C (212 °F)</i>

· **Flash point:** *Not applicable.*

· **Flammability (solid, gaseous):** *Not determined.*

· **Ignition temperature:** *Not determined*

· **Decomposition temperature:** *Not determined.*

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

· **Danger of explosion:** *Not determined.*

· **Explosion limits:**

· **Lower:** *Not determined.*

(Contd. on page 7)

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Reviewed on 06/01/2020

Product name: Pharma Internal Standard 1

(Contd. of page 6)

Upper:	<i>Not determined.</i>
· Vapor pressure at 20 °C (68 °F):	<i>23 hPa (17.3 mm Hg)</i>
· Density at 20 °C (68 °F):	<i>1.00756 g/cm³ (8.40809 lbs/gal)</i>
· Relative density	<i>Not determined.</i>
· Vapor density	<i>Not determined.</i>
· Evaporation rate	<i>Not determined.</i>
· Solubility in / Miscibility with Water:	<i>Fully miscible.</i>
· Partition coefficient (n-octanol/water):	<i>Not determined.</i>
· Viscosity:	
· Dynamic:	<i>Not determined.</i>
· Kinematic:	<i>Not determined.</i>
· Other information	<i>No further relevant information available.</i>

10 Stability and reactivity

- **Reactivity**
Stable under normal conditions.
No further relevant information available.
- **Chemical stability** *Stable under normal conditions.*
- **Thermal decomposition / conditions to be avoided:**
Formation of toxic gases is possible during heating or in case of fire.
- **Possibility of hazardous reactions** *No dangerous reactions known.*
- **Conditions to avoid** *Heat.*
- **Incompatible materials:**
Strong oxidizing agents.
Metals.
- **Hazardous decomposition products:** *Formation of toxic gases is possible during heating or in case of fire.*

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:** *Based on available data, the classification criteria are not met.*
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

- **Carcinogenic categories**

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

None of the ingredients is listed.

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Reviewed on 06/01/2020

Product name: Pharma Internal Standard 1

(Contd. of page 7)

· 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.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
· 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: Dispose in accordance with national regulations.
· Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
· DOT, ADR, IMDG, IATA UN3264
· DOT Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Hydrofluoric acid)
· ADR 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROFLUORIC ACID)
· IMDG, IATA CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROFLUORIC ACID)

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Printing date 06/01/2020

Reviewed on 06/01/2020

Product name: Pharma Internal Standard 1

(Contd. of page 8)

- **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

- **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

- **UN "Model Regulation":** UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROFLUORIC ACID), 8, III

15 Regulatory information

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

- **Sara**

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

CAS: 7697-37-2	Nitric acid
CAS: 7664-39-3	hydrofluoric acid
CAS: 13494-80-9	tellurium

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

CAS: 7697-37-2	Nitric acid
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(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/01/2020

Reviewed on 06/01/2020

Product name: Pharma Internal Standard 1

(Contd. of page 9)

CAS: 7664-39-3 hydrofluoric acid

· TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

· Hazardous Air Pollutants

CAS: 7664-39-3 hydrofluoric acid

· 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.

· Hazard pictograms


GHS05 GHS07

· Signal word Warning

· Hazard-determining components of labeling:

hydrofluoric acid

· Hazard statements

H290 May be corrosive to metals.

H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

· Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

P406 Store in corrosive resistant container with a resistant inner liner.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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US

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acc. to OSHA HCS

Printing date 06/01/2020

Reviewed on 06/01/2020

Product name: Pharma Internal Standard 1

(Contd. of page 10)

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**16 Other information**

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· **Date of preparation / last revision** 06/01/2020 / -· **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

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Ox. Liq. 2: Oxidizing liquids – Category 2

Met. Corr.1: Corrosive to metals – Category 1

Acute Tox. 2: Acute toxicity – Category 2

Acute Tox. 4: Acute toxicity – Category 4

Acute Tox. 1: Acute toxicity – Category 1

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

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

· **Sources**

Tables 3.1 and 3.2 from Annex 6 of EC 1272/2008, EC 1907/2006, EH40/2005 as amended 2011, Registry of Toxic Effects of Chemical Substances (RTECS), The Dictionary of Substances and their Effects, 1st Edition, IUCLID.

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