



# Agilent Technologies

**Kit Name:** IntelliQuant Calibration Kit

**Kit PN:** 5191-3932

## Kit Components

Component Part Number	Component Name	Volume or mass/ container	No. of component containers/ kit
5191-3933	IntelliQuant Multi-Element Standard 1	100 mL	1
5191-3934	IntelliQuant Multi-Element Standard 2	100 mL	1
5191-3935	IntelliQuant Multi-Element Standard 3	100 mL	1
5191-3936	IntelliQuant Multi-Element Standard 4	100 mL	1
5191-3937	IntelliQuant Multi-Element Standard 5	100 mL	1
5191-3938	IntelliQuant Multi-Element Standard 6	100 mL	1
5191-3939	IntelliQuant Multi-Element Standard 7	100 mL	1
5190-7001	Calibration blank solution 5pct HNO <sub>3</sub>	500 mL	1

SDSs for each component follow this cover sheet.

## Transportation Information

DOT	IATA/ICAO	China
UN3264, Corrosive Liquid, Acidic, Inorganic, n.o.s. (Nitric Acid, Hydrochloric Acid, Hydrofluoric Acid), 8, II.	UN3264, Corrosive Liquid, Acidic, Inorganic, n.o.s. (Nitric Acid, Hydrochloric Acid, Hydrofluoric Acid), 8, II.	UN3264, Corrosive Liquid, Acidic, Inorganic, n.o.s. (Nitric Acid, Hydrochloric Acid, Hydrofluoric Acid), 8, II.

## Safety Data Sheet

acc. to OSHA HCS

Printing date 10/27/2021

Reviewed on 10/27/2021

### 1 Identification

· **Product identifier**

· **Product name: IntelliQuant Multi-Element Standard 1 [100mL bottle]**

· **Part number:** 5191-3933

· **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](mailto: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

Skin Irrit. 2 H315 Causes skin irritation.

· **Label elements**

· **GHS label elements**

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

· **Hazard pictograms**



GHS05

· **Signal word** Danger

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

nitric acid

· **Hazard statements**

H290 May be corrosive to metals.

H315 Causes skin irritation.

H318 Causes serious eye damage.

· **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.

P310 Immediately call a poison center/doctor.

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US

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**Product name: IntelliQuant Multi-Element Standard 1 [100mL bottle]**

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P321 *Specific treatment (see on this label).*  
 P332+P313 *If skin irritation occurs: 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 RTECS: QU5775000	nitric acid Ox. Liq. 3, H272; Acute Tox. 3, H331; Met. Corr. 1, H290; Skin Corr. 1A, H314	<5%
CAS: 7439-92-1 RTECS: OF 7525000	Lead Carc. 2, H351; Repr. 1A, H360; STOT RE 1, H372; Aquatic Acute 1, H400; Aquatic Chronic 1, H410	<0.1%

- **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.
- **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. Then consult a doctor.
- **After swallowing:** Rinse mouth. Do not induce vomiting.

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**Product name: IntelliQuant Multi-Element Standard 1 [100mL bottle]**

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- **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.  
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.  
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: 1314-36-9	Yttrium oxide	3.8 mg/m <sup>3</sup>
CAS: 1314-37-0	Ytterbium (III) oxide	30 mg/m <sup>3</sup>
CAS: 7439-92-1	Lead	0.15 mg/m <sup>3</sup>
CAS: 7439-96-5	Manganese	3 mg/m <sup>3</sup>
CAS: 7440-22-4	Silver, powder	0.3 mg/m <sup>3</sup>
CAS: 7440-38-2	Arsenic	1.5 mg/m <sup>3</sup>
CAS: 7440-47-3	Chromium	1.5 mg/m <sup>3</sup>
CAS: 7664-38-2	Phosphoric acid	3 mg/m <sup>3</sup>
CAS: 12036-44-1	Thulium oxide	30 mg/m <sup>3</sup>
CAS: 12061-16-4	Dierbium trioxide	15 mg/m <sup>3</sup>

- **PAC-2:**

CAS: 7697-37-2	nitric acid	24 ppm
CAS: 1314-36-9	Yttrium oxide	43 mg/m <sup>3</sup>

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**Product name: IntelliQuant Multi-Element Standard 1 [100mL bottle]**

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CAS: 1314-37-0	Ytterbium (III) oxide	330 mg/m <sup>3</sup>
CAS: 7439-92-1	Lead	120 mg/m <sup>3</sup>
CAS: 7439-96-5	Manganese	5 mg/m <sup>3</sup>
CAS: 7440-22-4	Silver, powder	170 mg/m <sup>3</sup>
CAS: 7440-38-2	Arsenic	17 mg/m <sup>3</sup>
CAS: 7440-47-3	Chromium	17 mg/m <sup>3</sup>
CAS: 7664-38-2	Phosphoric acid	30 mg/m <sup>3</sup>
CAS: 12036-44-1	Thulium oxide	330 mg/m <sup>3</sup>
CAS: 12061-16-4	Dierbium trioxide	170 mg/m <sup>3</sup>

**· PAC-3:**

CAS: 7697-37-2	nitric acid	92 ppm
CAS: 1314-36-9	Yttrium oxide	260 mg/m <sup>3</sup>
CAS: 1314-37-0	Ytterbium (III) oxide	2,000 mg/m <sup>3</sup>
CAS: 7439-92-1	Lead	700 mg/m <sup>3</sup>
CAS: 7439-96-5	Manganese	1,800 mg/m <sup>3</sup>
CAS: 7440-22-4	Silver, powder	990 mg/m <sup>3</sup>
CAS: 7440-38-2	Arsenic	100 mg/m <sup>3</sup>
CAS: 7440-47-3	Chromium	99 mg/m <sup>3</sup>
CAS: 7664-38-2	Phosphoric acid	150 mg/m <sup>3</sup>
CAS: 12036-44-1	Thulium oxide	2,000 mg/m <sup>3</sup>
CAS: 12061-16-4	Dierbium trioxide	990 mg/m <sup>3</sup>

### 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.

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Product name: IntelliQuant Multi-Element Standard 1 [100mL bottle]

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Control parameters

Components with limit values that require monitoring at the workplace:

CAS: 7697-37-2 nitric acid

PEL Long-term value: 5 mg/m³, 2 ppm

REL Short-term value: 10 mg/m³, 4 ppm
Long-term value: 5 mg/m³, 2 ppm

TLV Short-term value: 10 mg/m³, 4 ppm
Long-term value: 5.2 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 skin.
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

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**Product name: IntelliQuant Multi-Element Standard 1 [100mL bottle]**

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### 9 Physical and chemical properties

· *Information on basic physical and chemical properties*

· *General Information*

· *Appearance:*

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

· *pH-value:* < 2

· *Change in condition*

· <i>Melting point/Melting range:</i>	<i>Not determined.</i>
· <i>Boiling point/Boiling range:</i>	<i>Not determined.</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:*

· <i>Lower:</i>	<i>Not determined.</i>
· <i>Upper:</i>	<i>Not determined.</i>

· *Vapor pressure:* *Not determined.*

· *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:*

· <i>Dynamic:</i>	<i>Not determined.</i>
· <i>Kinematic:</i>	<i>Not determined.</i>

· *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.*

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**Product name: IntelliQuant Multi-Element Standard 1 [100mL bottle]**

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- **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	2.65 mg/l (rat)
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**CAS: 7440-22-4 Silver, powder**

Oral	LD50	>10,000 mg/kg (mouse)
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- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:**  
Strong irritant with the danger of severe eye injury.  
Causes serious eye damage.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Irritant

- **Carcinogenic categories**

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

CAS: 7439-92-1	Lead	2B
CAS: 7440-38-2	Arsenic	I
CAS: 7440-47-3	Chromium	3

- **NTP (National Toxicology Program)**

CAS: 7439-92-1	Lead	R
CAS: 7440-38-2	Arsenic	K

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

CAS: 7440-38-2	Arsenic
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US

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Printing date 10/27/2021

Reviewed on 10/27/2021

**Product name: IntelliQuant Multi-Element Standard 1 [100mL bottle]**

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### 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

**CAS: 7697-37-2 nitric acid**

LC50/48	180 mg/l (crustacean)
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**CAS: 7440-22-4 Silver, powder**

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

- **DOT**

- **ADR**

- **IMDG, IATA**

UN3264

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

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

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

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Printing date 10/27/2021

Reviewed on 10/27/2021

**Product name: IntelliQuant Multi-Element Standard 1 [100mL bottle]**

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· **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

· **Hazard identification number (Kemler code):** 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**

No further relevant information available.

· **Sara**

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

CAS: 7697-37-2 nitric acid

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*acc. to OSHA HCS*

Printing date 10/27/2021

Reviewed on 10/27/2021

**Product name: IntelliQuant Multi-Element Standard 1 [100mL bottle]**

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

CAS: 7697-37-2	nitric acid
CAS: 7439-92-1	Lead
CAS: 7439-96-5	Manganese
CAS: 7440-22-4	Silver, powder
CAS: 7440-38-2	Arsenic
CAS: 7440-47-3	Chromium
CAS: 7664-38-2	Phosphoric acid

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

CAS: 7732-18-5	Water	ACTIVE
CAS: 7697-37-2	nitric acid	ACTIVE
CAS: 584-09-8	Rubidium carbonate	ACTIVE
CAS: 1314-36-9	Yttrium oxide	ACTIVE
CAS: 1314-37-0	Ytterbium (III) oxide	ACTIVE
CAS: 7439-92-1	Lead	ACTIVE
CAS: 7439-96-5	Manganese	ACTIVE
CAS: 7440-22-4	Silver, powder	ACTIVE
CAS: 7440-38-2	Arsenic	ACTIVE
CAS: 7440-47-3	Chromium	ACTIVE
CAS: 7664-38-2	Phosphoric acid	ACTIVE
CAS: 12036-44-1	Thulium oxide	ACTIVE
CAS: 12061-16-4	Dierbium trioxide	ACTIVE

**· Hazardous Air Pollutants**

CAS: 7439-92-1	Lead
CAS: 7439-96-5	Manganese

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

CAS: 7439-92-1	Lead
CAS: 7440-38-2	Arsenic

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

CAS: 7439-92-1	Lead
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**· Chemicals known to cause reproductive toxicity for males:**

CAS: 7439-92-1	Lead
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**· Chemicals known to cause developmental toxicity:**

CAS: 7439-92-1	Lead
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**· Carcinogenic categories**
**· EPA (Environmental Protection Agency)**

CAS: 7439-92-1	Lead	B2
CAS: 7439-96-5	Manganese	D
CAS: 7440-22-4	Silver, powder	D

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**Product name: IntelliQuant Multi-Element Standard 1 [100mL bottle]**

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CAS: 7440-38-2	Arsenic	A
CAS: 7440-47-3	Chromium	D
<b>· TLV (Threshold Limit Value)</b>		
CAS: 7439-92-1	Lead	A3
CAS: 7440-38-2	Arsenic	A1
CAS: 7440-47-3	Chromium	A4
<b>· NIOSH-Ca (National Institute for Occupational Safety and Health)</b>		
CAS: 7440-38-2	Arsenic	

**· Hazard pictograms**

GHS05

**· Signal word** *Danger***· Hazard-determining components of labeling:***nitric acid***· Hazard statements***H290 May be corrosive to metals.**H315 Causes skin irritation.**H318 Causes serious eye damage.***· 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.**P310 Immediately call a poison center/doctor.**P321 Specific treatment (see on this label).**P332+P313 If skin irritation occurs: 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.*

**· Contact:****· Date of preparation / last revision** 10/27/2021 / -**· Abbreviations and acronyms:***ADR: Accord relatif au transport international 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**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)*

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Printing date 10/27/2021

Reviewed on 10/27/2021

**Product name: IntelliQuant Multi-Element Standard 1 [100mL bottle]**

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*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. 3: Oxidizing liquids – Category 3**Met. Corr.1: Corrosive to metals – Category 1**Acute Tox. 3: Acute toxicity – Category 3**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**Carc. 2: Carcinogenicity – Category 2**Repr. 1A: Reproductive toxicity – Category 1A**STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1**Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1**Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1***• 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 10/29/2021

Reviewed on 10/29/2021

**1 Identification**

- **Product identifier**
- **Product name: IntelliQuant Multi-Element Standard 2 [100 mL bottle]**
- **Part number:** 5191-3934
- **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](mailto: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

*Skin Irrit. 2 H315 Causes skin irritation.*

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



GHS05

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**  
*nitric acid*
- **Hazard statements**  
*H290 May be corrosive to metals.*  
*H315 Causes skin irritation.*  
*H318 Causes serious eye damage.*
- **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.*  
*P310 Immediately call a poison center/doctor.*

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## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 10/29/2021

Reviewed on 10/29/2021

**Product name: IntelliQuant Multi-Element Standard 2 [100 mL bottle]**

(Contd. of page 1)

P321 *Specific treatment (see on this label).*  
 P332+P313 *If skin irritation occurs: 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	<5%
RTECS: QU5775000	 Ox. Liq. 3, H272;  Acute Tox. 3, H331;  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. Then 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)



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

Printing date 10/29/2021

Reviewed on 10/29/2021

**Product name: IntelliQuant Multi-Element Standard 2 [100 mL 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.  
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.  
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: 1308-96-9	Europium(III) oxide	15 mg/m <sup>3</sup>
CAS: 1312-81-8	Lanthanum oxide	4 mg/m <sup>3</sup>
CAS: 7440-02-0	nickel	4.5 mg/m <sup>3</sup>
CAS: 7783-20-2	Ammonium sulfate	13 mg/m <sup>3</sup>
CAS: 10294-41-4	Cerium(III) nitrate hexahydrate	13 mg/m <sup>3</sup>
CAS: 12055-62-8	Holmium oxide	30 mg/m <sup>3</sup>
CAS: 12064-62-9	Digadolinium trioxide	15 mg/m <sup>3</sup>
CAS: 13494-80-9	tellurium	1.8 mg/m <sup>3</sup>

· **PAC-2:**

CAS: 7697-37-2	nitric acid	24 ppm
CAS: 1308-96-9	Europium(III) oxide	170 mg/m <sup>3</sup>
CAS: 1312-81-8	Lanthanum oxide	44 mg/m <sup>3</sup>
CAS: 7440-02-0	nickel	50 mg/m <sup>3</sup>
CAS: 7783-20-2	Ammonium sulfate	140 mg/m <sup>3</sup>

(Contd. on page 4)



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

Printing date 10/29/2021

Reviewed on 10/29/2021

**Product name: IntelliQuant Multi-Element Standard 2 [100 mL bottle]**

(Contd. of page 3)

CAS: 10294-41-4	Cerium(III) nitrate hexahydrate	140 mg/m <sup>3</sup>
CAS: 12055-62-8	Holmium oxide	330 mg/m <sup>3</sup>
CAS: 12064-62-9	Digadolinium trioxide	170 mg/m <sup>3</sup>
CAS: 13494-80-9	tellurium	20 mg/m <sup>3</sup>

**· PAC-3:**

CAS: 7697-37-2	nitric acid	92 ppm
CAS: 1308-96-9	Europium(III) oxide	990 mg/m <sup>3</sup>
CAS: 1312-81-8	Lanthanum oxide	270 mg/m <sup>3</sup>
CAS: 7440-02-0	nickel	99 mg/m <sup>3</sup>
CAS: 7783-20-2	Ammonium sulfate	840 mg/m <sup>3</sup>
CAS: 10294-41-4	Cerium(III) nitrate hexahydrate	830 mg/m <sup>3</sup>
CAS: 12055-62-8	Holmium oxide	2,000 mg/m <sup>3</sup>
CAS: 12064-62-9	Digadolinium trioxide	990 mg/m <sup>3</sup>
CAS: 13494-80-9	tellurium	110 mg/m <sup>3</sup>

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

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

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## Safety Data Sheet

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**Product name: IntelliQuant Multi-Element Standard 2 [100 mL bottle]**

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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
  - Keep away from foodstuffs, beverages and feed.
  - Immediately remove all soiled and contaminated clothing.
  - Wash hands before breaks and at the end of work.
  - Avoid contact with the skin.
  - 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:**

<b>Form:</b>	Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	Not determined.
- **pH-value:** < 2
- **Change in condition**

<b>Melting point/Melting range:</b>	Not determined.
	Not determined.
<b>Boiling point/Boiling range:</b>	Not determined.

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**Product name: IntelliQuant Multi-Element Standard 2 [100 mL bottle]**

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· <b>Flash point:</b>	<i>Not applicable.</i>
· <b>Flammability (solid, gaseous):</b>	<i>Not determined.</i>
· <b>Ignition temperature:</b>	<i>Not determined</i>
· <b>Decomposition temperature:</b>	<i>Not determined.</i>
· <b>Auto igniting:</b>	<i>Product is not selfigniting.</i>
· <b>Danger of explosion:</b>	<i>Not determined.</i>
· <b>Explosion limits:</b>	
<b>Lower:</b>	<i>Not determined.</i>
<b>Upper:</b>	<i>Not determined.</i>
· <b>Vapor pressure:</b>	<i>Not determined.</i>
· <b>Density:</b>	<i>Not determined.</i>
· <b>Relative density</b>	<i>Not determined.</i>
· <b>Vapor density</b>	<i>Not determined.</i>
· <b>Evaporation rate</b>	<i>Not determined.</i>
· <b>Solubility in / Miscibility with Water:</b>	<i>Fully miscible.</i>
· <b>Partition coefficient (n-octanol/water):</b>	<i>Not determined.</i>
· <b>Viscosity:</b>	
<b>Dynamic:</b>	<i>Not determined.</i>
<b>Kinematic:</b>	<i>Not determined.</i>
· <b>Solvent content:</b>	
<b>VOC content:</b>	<i>0.00 %</i>
· <b>Other information</b>	<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.*

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**Product name: IntelliQuant Multi-Element Standard 2 [100 mL bottle]**

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### 11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

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

<b>CAS: 7697-37-2 nitric acid</b>		
Inhalative	LC50/4 h	2.65 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.

Causes serious eye damage.

- **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:

Irritant

- **Carcinogenic categories**

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

CAS: 7440-02-0	nickel	2B
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- **NTP (National Toxicology Program)**

CAS: 7440-02-0	nickel	R
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- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

### 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

<b>CAS: 7697-37-2 nitric acid</b>		
LC50/48	180 mg/l (crustacean)	

- **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.

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### Safety Data Sheet acc. to OSHA HCS

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**Product name: IntelliQuant Multi-Element Standard 2 [100 mL bottle]**



· **Other adverse effects** No further relevant information available.

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#### 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

· <b>UN-Number</b>	UN3264
· <b>DOT, ADR, IMDG, IATA</b>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)
· <b>DOT</b>	3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
· <b>ADR</b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
· <b>IMDG, IATA</b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
· <b>Transport hazard class(es)</b>	
· <b>DOT</b>	
	
· <b>Class</b>	8 Corrosive substances
· <b>Label</b>	8
· <b>ADR, IMDG, IATA</b>	
	
· <b>Class</b>	8 Corrosive substances
· <b>Label</b>	8
· <b>Packing group</b>	III
· <b>DOT, ADR, IMDG, IATA</b>	III
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b>	Warning: Corrosive substances
· <b>Hazard identification number (Kemler code):</b>	80
· <b>EMS Number:</b>	F-A,S-B
· <b>Segregation groups</b>	Acids
· <b>Stowage Category</b>	A

(Contd. on page 9)

## Safety Data Sheet

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**Product name: IntelliQuant Multi-Element Standard 2 [100 mL bottle]**

(Contd. of page 8)

· <b>Stowage Code</b>	SW2 Clear of living quarters.
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), 8, III

### 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
No further relevant information available.

· **Sara**

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

CAS: 7697-37-2	nitric acid
----------------	-------------

CAS: 13494-80-9	tellurium
-----------------	-----------

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

CAS: 7697-37-2	nitric acid
----------------	-------------

CAS: 7440-02-0	nickel
----------------	--------

CAS: 7783-20-2	Ammonium sulfate
----------------	------------------

CAS: 10294-41-4	Cerium(III) nitrate hexahydrate
-----------------	---------------------------------

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

CAS: 7732-18-5	Water	ACTIVE
----------------	-------	--------

CAS: 7697-37-2	nitric acid	ACTIVE
----------------	-------------	--------

CAS: 1308-96-9	Europium(III) oxide	ACTIVE
----------------	---------------------	--------

CAS: 1312-81-8	Lanthanum oxide	ACTIVE
----------------	-----------------	--------

CAS: 7440-02-0	nickel	ACTIVE
----------------	--------	--------

CAS: 7783-20-2	Ammonium sulfate	ACTIVE
----------------	------------------	--------

CAS: 12055-62-8	Holmium oxide	ACTIVE
-----------------	---------------	--------

CAS: 12064-62-9	Digadolinium trioxide	ACTIVE
-----------------	-----------------------	--------

CAS: 13494-80-9	tellurium	ACTIVE
-----------------	-----------	--------

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

CAS: 7440-02-0	nickel
----------------	--------

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

None of the ingredients is listed.

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## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 10/29/2021

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**Product name: IntelliQuant Multi-Element Standard 2 [100 mL bottle]**

(Contd. of page 9)

**· 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)**

CAS: 7440-02-0 | nickel

A5

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

CAS: 7440-02-0 | nickel

**· Hazard pictograms**


GHS05

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

nitric acid

**· Hazard statements**

H290 May be corrosive to metals.

H315 Causes skin irritation.

H318 Causes serious eye damage.

**· 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.

P310 Immediately call a poison center/doctor.

P321 Specific treatment (see on this label).

P332+P313 If skin irritation occurs: 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.

**· Contact:**
**· Date of preparation / last revision 10/29/2021 / -**
**· Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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

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**Product name: IntelliQuant Multi-Element Standard 2 [100 mL 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*  
*Ox. Liq. 3: Oxidizing liquids – Category 3*  
*Met. Corr.1: Corrosive to metals – Category 1*  
*Acute Tox. 3: Acute toxicity – Category 3*  
*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*

**• 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 10/29/2021

Reviewed on 10/29/2021

**1 Identification**

- **Product identifier**
- **Product name: IntelliQuant Multi-Element Standard 3 [100 mL bottle]**
- **Part number:** 5191-3935
- **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](mailto: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

*Skin Irrit. 2 H315 Causes skin irritation.*

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



GHS05

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**  
*nitric acid*
- **Hazard statements**  
*H290 May be corrosive to metals.*  
*H315 Causes skin irritation.*  
*H318 Causes serious eye damage.*
- **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.*  
*P310 Immediately call a poison center/doctor.*

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**Product name: IntelliQuant Multi-Element Standard 3 [100 mL bottle]**

(Contd. of page 1)

P321 *Specific treatment (see on this label).*  
 P332+P313 *If skin irritation occurs: 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	<5%
RTECS: QU5775000	 Ox. Liq. 3, H272;  Acute Tox. 3, H331;  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. Then 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)

## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 10/29/2021

Reviewed on 10/29/2021

**Product name: IntelliQuant Multi-Element Standard 3 [100 mL 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.  
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.  
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: 1308-87-8	Didysprosium trioxide	15 mg/m <sup>3</sup>
CAS: 1314-62-1	vanadium pentoxide	0.64 mg/m <sup>3</sup>
CAS: 7440-48-4	Cobalt	0.18 mg/m <sup>3</sup>
CAS: 13823-29-5	Thorium tetranitrate	2.9 mg/m <sup>3</sup>

- **PAC-2:**

CAS: 7697-37-2	nitric acid	24 ppm
CAS: 1308-87-8	Didysprosium trioxide	170 mg/m <sup>3</sup>
CAS: 1314-62-1	vanadium pentoxide	7 mg/m <sup>3</sup>
CAS: 7440-48-4	Cobalt	2 mg/m <sup>3</sup>
CAS: 13823-29-5	Thorium tetranitrate	32 mg/m <sup>3</sup>

- **PAC-3:**

CAS: 7697-37-2	nitric acid	92 ppm
CAS: 1308-87-8	Didysprosium trioxide	990 mg/m <sup>3</sup>
CAS: 1314-62-1	vanadium pentoxide	70 mg/m <sup>3</sup>

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**Safety Data Sheet**  
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**Product name: IntelliQuant Multi-Element Standard 3 [100 mL bottle]**

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CAS: 7440-48-4	Cobalt	20 mg/m <sup>3</sup>
CAS: 13823-29-5	Thorium tetranitrate	190 mg/m <sup>3</sup>

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

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Avoid contact with the skin.  
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: IntelliQuant Multi-Element Standard 3 [100 mL 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.

Not determined.

**Boiling point/Boiling range:** Not determined.

- **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:** Not determined.

- **Density:** Not determined.

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**Product name: IntelliQuant Multi-Element Standard 3 [100 mL bottle]**

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· <b>Relative density</b>	<i>Not determined.</i>
· <b>Vapor density</b>	<i>Not determined.</i>
· <b>Evaporation rate</b>	<i>Not determined.</i>
· <b>Solubility in / Miscibility with Water:</b>	<i>Fully miscible.</i>
· <b>Partition coefficient (n-octanol/water):</b>	<i>Not determined.</i>
· <b>Viscosity:</b>	
<b>Dynamic:</b>	<i>Not determined.</i>
<b>Kinematic:</b>	<i>Not determined.</i>
· <b>Solvent content:</b>	
<b>VOC content:</b>	<i>0.00 %</i>
· <b>Other information</b>	<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: 7697-37-2 nitric acid**

Inhalative	LC50/4 h	2.65 mg/l (rat)
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- **Primary irritant effect:**
- **on the skin:** *Irritant to skin and mucous membranes.*
- **on the eye:**  
*Strong irritant with the danger of severe eye injury.*  
*Causes serious eye damage.*
- **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:*  
*Irritant*

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US



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**Product name: IntelliQuant Multi-Element Standard 3 [100 mL bottle]**

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· **Carcinogenic categories**

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

CAS: 1314-62-1	vanadium pentoxide	2B
CAS: 7440-48-4	Cobalt	2B

· **NTP (National Toxicology Program)**

CAS: 7440-48-4	Cobalt	R
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· **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)	

· **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

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**Product name: IntelliQuant Multi-Element Standard 3 [100 mL bottle]**

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

· **Transport hazard class(es)**

· **DOT**



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

· **ADR, IMDG, IATA**



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

· **Packing group**

· **DOT, ADR, IMDG, IATA** III

· **Environmental hazards:** *Not applicable.*

· **Special precautions for user** *Warning: Corrosive substances*

· **Hazard identification number (Kemler code):** 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**

<ul style="list-style-type: none"> <li>· <b>Excepted quantities (EQ)</b></li> </ul>	<p><i>Code: E1</i>  <i>Maximum net quantity per inner packaging: 30 ml</i>  <i>Maximum net quantity per outer packaging: 1000 ml</i></p>
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<ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>	<p><i>UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), 8, III</i></p>
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### 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
*No further relevant information available.*

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**Product name: IntelliQuant Multi-Element Standard 3 [100 mL bottle]**

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· **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: 1314-62-1 vanadium pentoxide

CAS: 7440-48-4 Cobalt

CAS: 13823-29-5 Thorium tetranitrate

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

CAS: 7732-18-5 Water

ACTIVE

CAS: 7697-37-2 nitric acid

ACTIVE

CAS: 1308-87-8 Didysprosium trioxide

ACTIVE

CAS: 1314-62-1 vanadium pentoxide

ACTIVE

CAS: 7440-15-5 rhenium

ACTIVE

CAS: 7440-48-4 Cobalt

ACTIVE

CAS: 13823-29-5 Thorium tetranitrate

ACTIVE

· **Hazardous Air Pollutants**

CAS: 7440-48-4 Cobalt

· **Proposition 65**

· **Chemicals known to cause cancer:**

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.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

CAS: 1314-62-1 vanadium pentoxide

A3

CAS: 7440-48-4 Cobalt

A3

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

None of the ingredients is listed.

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**Product name: IntelliQuant Multi-Element Standard 3 [100 mL bottle]**

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**· Hazard pictograms**

GHS05

**· Signal word** *Danger***· Hazard-determining components of labeling:***nitric acid***· Hazard statements***H290 May be corrosive to metals.**H315 Causes skin irritation.**H318 Causes serious eye damage.***· 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.**P310 Immediately call a poison center/doctor.**P321 Specific treatment (see on this label).**P332+P313 If skin irritation occurs: 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.*

**· Contact:****· Date of preparation / last revision** 10/29/2021 / -**· Abbreviations and acronyms:***ADR: Accord relatif au transport international 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**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**Ox. Liq. 3: Oxidizing liquids – Category 3**Met. Corr. 1: Corrosive to metals – Category 1**Acute Tox. 3: Acute toxicity – Category 3*

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**Product name: IntelliQuant Multi-Element Standard 3 [100 mL bottle]**

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*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***· 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 11/02/2021

Reviewed on 11/02/2021

**1 Identification**

- **Product identifier**
- **Product name: IntelliQuant Multi-Element Standard 4 [100 mL bottle]**
- **Part number:** 5191-3936
- **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](mailto: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

*Skin Irrit. 2 H315 Causes skin irritation.*

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



GHS05

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**  
*nitric acid*
- **Hazard statements**  
*H290 May be corrosive to metals.*  
*H315 Causes skin irritation.*  
*H318 Causes serious eye damage.*
- **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.*  
*P310 Immediately call a poison center/doctor.*

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## Safety Data Sheet

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**Product name: IntelliQuant Multi-Element Standard 4 [100 mL bottle]**

(Contd. of page 1)

P321 *Specific treatment (see on this label).*  
 P332+P313 *If skin irritation occurs: 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	<5%
RTECS: QU5775000	 Ox. Liq. 3, H272;  Acute Tox. 3, H331;  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. Then 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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Reviewed on 11/02/2021

**Product name: IntelliQuant Multi-Element Standard 4 [100 mL 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.  
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.  
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-I:**

CAS: 7697-37-2	nitric acid	0.16 ppm
CAS: 471-34-1	Calcium carbonate	45 mg/m <sup>3</sup>
CAS: 497-19-8	Sodium carbonate	7.6 mg/m <sup>3</sup>
CAS: 534-17-8	caesium carbonate	7 mg/m <sup>3</sup>
CAS: 554-13-2	Lithium carbonate	3.1 mg/m <sup>3</sup>
CAS: 7439-97-6	Mercury	0.15 mg/m <sup>3</sup>
CAS: 7440-28-0	thallium	0.06 mg/m <sup>3</sup>
CAS: 7440-43-9	cadmium	0.10 mg/m <sup>3</sup>
CAS: 7440-50-8	Copper	3 mg/m <sup>3</sup>
CAS: 7440-55-3	Gallium	30 mg/m <sup>3</sup>
CAS: 7440-66-6	zinc powder - zinc dust (stabilised)	6 mg/m <sup>3</sup>
CAS: 7440-69-9	Bismuth	15 mg/m <sup>3</sup>
CAS: 7440-74-6	Indium	0.3 mg/m <sup>3</sup>
CAS: 7757-79-1	Potassium nitrate	9 mg/m <sup>3</sup>
CAS: 7782-49-2	Selenium	0.6 mg/m <sup>3</sup>

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*acc. to OSHA HCS*

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**Product name: IntelliQuant Multi-Element Standard 4 [100 mL bottle]**

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CAS: 10022-31-8	Barium nitrate	2.9 mg/m <sup>3</sup>
CAS: 10042-76-9	Strontium nitrate	5.7 mg/m <sup>3</sup>
CAS: 10043-35-3	Boric acid	6 mg/m <sup>3</sup>
CAS: 13446-18-9	Magnesium nitrate hexahydrate	16 mg/m <sup>3</sup>

**· PAC-2:**

CAS: 7697-37-2	nitric acid	24 ppm
CAS: 471-34-1	Calcium carbonate	210 mg/m <sup>3</sup>
CAS: 497-19-8	Sodium carbonate	83 mg/m <sup>3</sup>
CAS: 534-17-8	caesium carbonate	77 mg/m <sup>3</sup>
CAS: 554-13-2	Lithium carbonate	34 mg/m <sup>3</sup>
CAS: 7439-97-6	Mercury	1.7 mg/m <sup>3</sup>
CAS: 7440-28-0	thallium	3.3 mg/m <sup>3</sup>
CAS: 7440-43-9	cadmium	0.76 mg/m <sup>3</sup>
CAS: 7440-50-8	Copper	33 mg/m <sup>3</sup>
CAS: 7440-55-3	Gallium	330 mg/m <sup>3</sup>
CAS: 7440-66-6	zinc powder - zinc dust (stabilised)	21 mg/m <sup>3</sup>
CAS: 7440-69-9	Bismuth	170 mg/m <sup>3</sup>
CAS: 7440-74-6	Indium	3.3 mg/m <sup>3</sup>
CAS: 7757-79-1	Potassium nitrate	100 mg/m <sup>3</sup>
CAS: 7782-49-2	Selenium	6.6 mg/m <sup>3</sup>
CAS: 10022-31-8	Barium nitrate	350 mg/m <sup>3</sup>
CAS: 10042-76-9	Strontium nitrate	62 mg/m <sup>3</sup>
CAS: 10043-35-3	Boric acid	23 mg/m <sup>3</sup>
CAS: 13446-18-9	Magnesium nitrate hexahydrate	180 mg/m <sup>3</sup>

**· PAC-3:**

CAS: 7697-37-2	nitric acid	92 ppm
CAS: 471-34-1	Calcium carbonate	1,300 mg/m <sup>3</sup>
CAS: 497-19-8	Sodium carbonate	500 mg/m <sup>3</sup>
CAS: 534-17-8	caesium carbonate	460 mg/m <sup>3</sup>
CAS: 554-13-2	Lithium carbonate	210 mg/m <sup>3</sup>
CAS: 7439-97-6	Mercury	8.9 mg/m <sup>3</sup>
CAS: 7440-28-0	thallium	20 mg/m <sup>3</sup>
CAS: 7440-43-9	cadmium	4.7 mg/m <sup>3</sup>
CAS: 7440-50-8	Copper	200 mg/m <sup>3</sup>
CAS: 7440-55-3	Gallium	2,000 mg/m <sup>3</sup>
CAS: 7440-66-6	zinc powder - zinc dust (stabilised)	120 mg/m <sup>3</sup>
CAS: 7440-69-9	Bismuth	990 mg/m <sup>3</sup>
CAS: 7440-74-6	Indium	20 mg/m <sup>3</sup>
CAS: 7757-79-1	Potassium nitrate	600 mg/m <sup>3</sup>
CAS: 7782-49-2	Selenium	40 mg/m <sup>3</sup>
CAS: 10022-31-8	Barium nitrate	2,100 mg/m <sup>3</sup>

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**Product name: IntelliQuant Multi-Element Standard 4 [100 mL bottle]**

CAS: 10042-76-9	Strontium nitrate	(Contd. of page 4) 370 mg/m <sup>3</sup>
CAS: 10043-35-3	Boric acid	830 mg/m <sup>3</sup>
CAS: 13446-18-9	Magnesium nitrate hexahydrate	1,100 mg/m <sup>3</sup>

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

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

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Avoid contact with the skin.
- 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.

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## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 11/02/2021

Reviewed on 11/02/2021

**Product name: IntelliQuant Multi-Element Standard 4 [100 mL bottle]**

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*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:** Not determined.

- **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.

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**Product name: IntelliQuant Multi-Element Standard 4 [100 mL bottle]**

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· <b>Vapor pressure:</b>	<i>Not determined.</i>
· <b>Density:</b>	<i>Not determined.</i>
· <b>Relative density</b>	<i>Not determined.</i>
· <b>Vapor density</b>	<i>Not determined.</i>
· <b>Evaporation rate</b>	<i>Not determined.</i>
· <b>Solubility in / Miscibility with Water:</b>	<i>Fully miscible.</i>
· <b>Partition coefficient (n-octanol/water):</b>	<i>Not determined.</i>
· <b>Viscosity:</b>	
· <b>Dynamic:</b>	<i>Not determined.</i>
· <b>Kinematic:</b>	<i>Not determined.</i>
· <b>Other information</b>	<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: 7697-37-2 nitric acid**

Inhalative	LC50/4 h	2.65 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.*  
*Causes serious eye damage.*
- **Sensitization:** *No sensitizing effects known.*
- **Additional toxicological information:**  
*The product shows the following dangers according to internally approved calculation methods for preparations:*  
*Irritant*

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## Safety Data Sheet

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**Product name: IntelliQuant Multi-Element Standard 4 [100 mL bottle]**

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- **Carcinogenic categories**

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

CAS: 7439-97-6	Mercury	3
CAS: 7440-43-9	cadmium	1
CAS: 7782-49-2	Selenium	3
CAS: 19049-40-2	Beryllium Oxyacetate	1

- **NTP (National Toxicology Program)**

CAS: 7440-43-9	cadmium	K
CAS: 19049-40-2	Beryllium Oxyacetate	K

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

CAS: 7440-43-9	cadmium	
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### 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

<b>CAS: 7697-37-2 nitric acid</b>	
LC50/48	180 mg/l (crustacean)

- **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.

US

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**Product name: IntelliQuant Multi-Element Standard 4 [100 mL bottle]**

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### 14 Transport information

<ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> <li>· <b>DOT</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG, IATA</b></li> </ul>	<p>UN3264            Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)            3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)            CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)</p>	
<ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT</b></li> </ul>	<p>8 Corrosive substances</p>	
 <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	<p>8            8</p>	
<ul style="list-style-type: none"> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	 <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	<p>8 Corrosive substances            8</p>
<ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>	<p>III</p>	
<ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> </ul>	<p>Not applicable.</p>	
<ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> <li>· <b>Hazard identification number (Kemler code):</b></li> <li>· <b>EMS Number:</b></li> <li>· <b>Segregation groups</b></li> <li>· <b>Stowage Category</b></li> <li>· <b>Stowage Code</b></li> </ul>	<p>Warning: Corrosive substances            80            F-A,S-B            Acids            A            SW2 Clear of living quarters.</p>	
<ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b></li> </ul>	<p>Not applicable.</p>	
<ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> </ul>	<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"> <li>· <b>UN "Model Regulation":</b></li> </ul>	<p>UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), 8, III</p>	

US

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**Product name: IntelliQuant Multi-Element Standard 4 [100 mL bottle]**

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### 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
No further relevant information available.

· **Sara**

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

CAS: 7697-37-2	nitric acid
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· **Section 313 (Specific toxic chemical listings):**

CAS: 7697-37-2	nitric acid
----------------	-------------

CAS: 554-13-2	Lithium carbonate
---------------	-------------------

CAS: 7439-97-6	Mercury
----------------	---------

CAS: 7440-28-0	thallium
----------------	----------

CAS: 7440-43-9	cadmium
----------------	---------

CAS: 7440-50-8	Copper
----------------	--------

CAS: 7440-66-6	zinc powder - zinc dust (stabilised)
----------------	--------------------------------------

CAS: 7757-79-1	Potassium nitrate
----------------	-------------------

CAS: 7782-49-2	Selenium
----------------	----------

CAS: 10022-31-8	Barium nitrate
-----------------	----------------

CAS: 10042-76-9	Strontium nitrate
-----------------	-------------------

CAS: 13446-18-9	Magnesium nitrate hexahydrate
-----------------	-------------------------------

CAS: 19049-40-2	Beryllium Oxyacetate
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· **TSCA (Toxic Substances Control Act):**

CAS: 7732-18-5	Water	ACTIVE
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CAS: 7697-37-2	nitric acid	ACTIVE
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CAS: 471-34-1	Calcium carbonate	ACTIVE
---------------	-------------------	--------

CAS: 497-19-8	Sodium carbonate	ACTIVE
---------------	------------------	--------

CAS: 534-17-8	caesium carbonate	ACTIVE
---------------	-------------------	--------

CAS: 554-13-2	Lithium carbonate	ACTIVE
---------------	-------------------	--------

CAS: 7439-97-6	Mercury	ACTIVE
----------------	---------	--------

CAS: 7440-28-0	thallium	ACTIVE
----------------	----------	--------

CAS: 7440-43-9	cadmium	ACTIVE
----------------	---------	--------

CAS: 7440-50-8	Copper	ACTIVE
----------------	--------	--------

CAS: 7440-55-3	Gallium	ACTIVE
----------------	---------	--------

CAS: 7440-66-6	zinc powder - zinc dust (stabilised)	ACTIVE
----------------	--------------------------------------	--------

CAS: 7440-69-9	Bismuth	ACTIVE
----------------	---------	--------

CAS: 7440-74-6	Indium	ACTIVE
----------------	--------	--------

CAS: 7757-79-1	Potassium nitrate	ACTIVE
----------------	-------------------	--------

CAS: 7782-49-2	Selenium	ACTIVE
----------------	----------	--------

CAS: 10022-31-8	Barium nitrate	ACTIVE
-----------------	----------------	--------

CAS: 10042-76-9	Strontium nitrate	ACTIVE
-----------------	-------------------	--------

CAS: 10043-35-3	Boric acid	ACTIVE
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**Product name: IntelliQuant Multi-Element Standard 4 [100 mL bottle]**

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**· Hazardous Air Pollutants**

None of the ingredients is listed.

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

CAS: 7440-43-9 cadmium

CAS: 19049-40-2 Beryllium Oxyacetate

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

None of the ingredients is listed.

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

CAS: 7440-43-9 cadmium

**· Chemicals known to cause developmental toxicity:**

CAS: 554-13-2 Lithium carbonate

CAS: 7439-97-6 Mercury

CAS: 7440-43-9 cadmium

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

CAS: 7439-97-6 Mercury

D

CAS: 7440-43-9 cadmium

B1

CAS: 7440-50-8 Copper

D

CAS: 7440-66-6 zinc powder - zinc dust (stabilised)

D, I, II

CAS: 7782-49-2 Selenium

D

CAS: 10022-31-8 Barium nitrate

D, CBD(inh), NL(oral)

CAS: 10043-35-3 Boric acid

I (oral)

**· TLV (Threshold Limit Value)**

CAS: 7439-97-6 Mercury

A4

CAS: 7440-43-9 cadmium

A2

CAS: 10022-31-8 Barium nitrate

A4

CAS: 10043-35-3 Boric acid

A4

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

CAS: 7440-43-9 cadmium

CAS: 19049-40-2 Beryllium Oxyacetate

**· Hazard pictograms**


GHS05

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

nitric acid

**· Hazard statements**

H290 May be corrosive to metals.

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**Safety Data Sheet**  
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Reviewed on 11/02/2021

**Product name: IntelliQuant Multi-Element Standard 4 [100 mL bottle]**

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*H315 Causes skin irritation.**H318 Causes serious eye damage.***· 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.**P310 Immediately call a poison center/doctor.**P321 Specific treatment (see on this label).**P332+P313 If skin irritation occurs: 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.

**· Contact:****· Date of preparation / last revision** 11/02/2021 / -**· Abbreviations and acronyms:***ADR: Accord relatif au transport international 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**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)**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. 3: Oxidizing liquids – Category 3**Met. Corr.1: Corrosive to metals – Category 1**Acute Tox. 3: Acute toxicity – Category 3**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***· 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 11/02/2021

Reviewed on 11/02/2021

**1 Identification**

- **Product identifier**
- **Product name: IntelliQuant Multi-Element Standard 5 [100 mL bottle]**
- **Part number:** 5191-3937
- **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](mailto: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

*Skin Irrit. 2 H315 Causes skin irritation.*

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



GHS05

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**  
*nitric acid*
- **Hazard statements**  
*H290 May be corrosive to metals.*  
*H315 Causes skin irritation.*  
*H318 Causes serious eye damage.*
- **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.*  
*P310 Immediately call a poison center/doctor.*

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**Product name: IntelliQuant Multi-Element Standard 5 [100 mL bottle]**

(Contd. of page 1)

P321 *Specific treatment (see on this label).*  
 P332+P313 *If skin irritation occurs: 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	<5%
RTECS: QU5775000	 Ox. Liq. 3, H272;  Acute Tox. 3, H331;  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. Then 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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## Safety Data Sheet

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Printing date 11/02/2021

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**Product name: IntelliQuant Multi-Element Standard 5 [100 mL 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.  
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.  
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: 1313-97-9	neodymium oxide	15 mg/m <sup>3</sup>
CAS: 7784-27-2	Aluminium nitrate nonahydrate	83 mg/m <sup>3</sup>
CAS: 10421-48-4	ferric nitrate	13 mg/m <sup>3</sup>
CAS: 12037-01-3	Tetraterbium heptaoxide	30 mg/m <sup>3</sup>
CAS: 12037-29-5	Praseodymium oxide	15 mg/m <sup>3</sup>
CAS: 13106-76-8	Ammonium molybdate(VI)	3.1 mg/m <sup>3</sup>
CAS: 13520-83-7	uranyl nitrate, hexahydrate	1.3 mg/m <sup>3</sup>

- **PAC-2:**

CAS: 7697-37-2	nitric acid	24 ppm
CAS: 1313-97-9	neodymium oxide	170 mg/m <sup>3</sup>
CAS: 7784-27-2	Aluminium nitrate nonahydrate	920 mg/m <sup>3</sup>
CAS: 10421-48-4	ferric nitrate	140 mg/m <sup>3</sup>
CAS: 12037-01-3	Tetraterbium heptaoxide	330 mg/m <sup>3</sup>
CAS: 12037-29-5	Praseodymium oxide	170 mg/m <sup>3</sup>

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**Product name: IntelliQuant Multi-Element Standard 5 [100 mL bottle]**

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CAS: 13106-76-8	Ammonium molybdate(VI)	22 mg/m <sup>3</sup>
CAS: 13520-83-7	uranyl nitrate, hexahydrate	7 mg/m <sup>3</sup>
<b>· PAC-3:</b>		
CAS: 7697-37-2	nitric acid	92 ppm
CAS: 1313-97-9	neodymium oxide	990 mg/m <sup>3</sup>
CAS: 7784-27-2	Aluminium nitrate nonahydrate	5,500 mg/m <sup>3</sup>
CAS: 10421-48-4	ferric nitrate	850 mg/m <sup>3</sup>
CAS: 12037-01-3	Tetraterbium heptaoxide	2,000 mg/m <sup>3</sup>
CAS: 12037-29-5	Praseodymium oxide	990 mg/m <sup>3</sup>
CAS: 13106-76-8	Ammonium molybdate(VI)	130 mg/m <sup>3</sup>
CAS: 13520-83-7	uranyl nitrate, hexahydrate	42 mg/m <sup>3</sup>

**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:**

<b>CAS: 7697-37-2 nitric acid</b>	
PEL	Long-term value: 5 mg/m <sup>3</sup> , 2 ppm
REL	Short-term value: 10 mg/m <sup>3</sup> , 4 ppm Long-term value: 5 mg/m <sup>3</sup> , 2 ppm
TLV	Short-term value: 10 mg/m <sup>3</sup> , 4 ppm Long-term value: 5.2 mg/m <sup>3</sup> , 2 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.

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**Product name: IntelliQuant Multi-Element Standard 5 [100 mL bottle]**

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*Wash hands before breaks and at the end of work.*

*Avoid contact with the skin.*

*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*

**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:** *Not determined.*

**· Flash point:** *Not applicable.*

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

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

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## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 11/02/2021

Reviewed on 11/02/2021

**Product name: IntelliQuant Multi-Element Standard 5 [100 mL bottle]**

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· <b>Decomposition temperature:</b>	<i>Not determined.</i>
· <b>Auto igniting:</b>	<i>Product is not selfigniting.</i>
· <b>Danger of explosion:</b>	<i>Not determined.</i>
· <b>Explosion limits:</b>	
<b>Lower:</b>	<i>Not determined.</i>
<b>Upper:</b>	<i>Not determined.</i>
· <b>Vapor pressure:</b>	<i>Not determined.</i>
· <b>Density:</b>	<i>Not determined.</i>
· <b>Relative density</b>	<i>Not determined.</i>
· <b>Vapor density</b>	<i>Not determined.</i>
· <b>Evaporation rate</b>	<i>Not determined.</i>
· <b>Solubility in / Miscibility with Water:</b>	<i>Fully miscible.</i>
· <b>Partition coefficient (n-octanol/water):</b>	<i>Not determined.</i>
· <b>Viscosity:</b>	
<b>Dynamic:</b>	<i>Not determined.</i>
<b>Kinematic:</b>	<i>Not determined.</i>
· <b>Other information</b>	<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:**
- |   |          |                 |
|---|----------|-----------------|
| · <b>LD/LC50 values that are relevant for classification:</b> |          |                 |
| CAS: 7697-37-2 nitric acid                                    |          |                 |
| Inhalative  | LC50/4 h | 2.65 mg/l (rat) |
- **Primary irritant effect:**
  - **on the skin:** *Irritant to skin and mucous membranes.*

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Product name: IntelliQuant Multi-Element Standard 5 [100 mL bottle]

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- on the eye: Strong irritant with the danger of severe eye injury. Causes serious eye damage.
Sensitization: No sensitizing effects known.
Additional toxicological information: The product shows the following dangers according to internally approved calculation methods for preparations: Irritant

Carcinogenic categories

IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

NTP (National Toxicology Program)

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

Toxicity

Aquatic toxicity:

CAS: 7697-37-2 nitric acid

LC50/48 180 mg/l (crustacean)

- 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.

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**Product name: IntelliQuant Multi-Element Standard 5 [100 mL bottle]**

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

### 14 Transport information

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

UN3264  
 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)  
 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
 (NITRIC ACID)  
 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

· **Hazard identification number (Kemler code):** 80

· **EMS Number:** F-A,S-B

· **Segregation groups** Acids

· **Stowage Category** A

· **Stowage Code** SW2 Clear of living quarters.

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

Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Excepted quantities (EQ)** Code: E1  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 1000 ml

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**Product name: IntelliQuant Multi-Element Standard 5 [100 mL bottle]**

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· **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**  
No further relevant information available.

· **Sara**

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

CAS: 7697-37-2	nitric acid
----------------	-------------

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

CAS: 7697-37-2	nitric acid
----------------	-------------

CAS: 7784-27-2	Aluminium nitrate nonahydrate
----------------	-------------------------------

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

CAS: 7732-18-5	Water	ACTIVE
----------------	-------	--------

CAS: 7697-37-2	nitric acid	ACTIVE
----------------	-------------	--------

CAS: 1313-97-9	neodymium oxide	ACTIVE
----------------	-----------------	--------

CAS: 10421-48-4	ferric nitrate	ACTIVE
-----------------	----------------	--------

CAS: 12037-01-3	Tetraterbium heptaoxide	ACTIVE
-----------------	-------------------------	--------

CAS: 12037-29-5	Praseodymium oxide	ACTIVE
-----------------	--------------------	--------

CAS: 13106-76-8	Ammonium molybdate(VI)	ACTIVE
-----------------	------------------------	--------

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

CAS: 13106-76-8	Ammonium molybdate(VI)	A3
-----------------	------------------------	----

CAS: 13520-83-7	uranyl nitrate, hexahydrate	AI
-----------------	-----------------------------	----

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

CAS: 13520-83-7	uranyl nitrate, hexahydrate
-----------------	-----------------------------

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**Product name: IntelliQuant Multi-Element Standard 5 [100 mL bottle]**

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**· Hazard pictograms**


GHS05

**· Signal word** *Danger*
**· Hazard-determining components of labeling:**
*nitric acid*
**· Hazard statements**
*H290 May be corrosive to metals.*
*H315 Causes skin irritation.*
*H318 Causes serious eye damage.*
**· 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.*
*P310 Immediately call a poison center/doctor.*
*P321 Specific treatment (see on this label).*
*P332+P313 If skin irritation occurs: 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.*

**· Contact:**
**· Date of preparation / last revision** 11/02/2021 / -

**· Abbreviations and acronyms:**
*ADR: Accord relatif au transport international 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*
*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)*
*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. 3: Oxidizing liquids – Category 3*
*Met. Corr.1: Corrosive to metals – Category 1*
*Acute Tox. 3: Acute toxicity – Category 3*
*Skin Corr. 1A: Skin corrosion/irritation – Category 1A*

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**Product name: IntelliQuant Multi-Element Standard 5 [100 mL bottle]**

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*Skin Irrit. 2: Skin corrosion/irritation – Category 2**Eye Dam. 1: Serious eye damage/eye irritation – Category 1***· 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 11/02/2021

Reviewed on 11/02/2021

**1 Identification**· **Product identifier**· **Product name: IntelliQuant Multi-Element Standard 6 [100mL Bottle]**· **Part number:** 5191-3938· **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](mailto: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

Skin Irrit. 2 H315 Causes skin irritation.

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

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

· **Hazard pictograms**

GHS05

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

nitric acid

· **Hazard statements**

H290 May be corrosive to metals.

H315 Causes skin irritation.

H318 Causes serious eye damage.

· **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.

P310 Immediately call a poison center/doctor.

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**Product name: IntelliQuant Multi-Element Standard 6 [100mL Bottle]**

(Contd. of page 1)

P321 *Specific treatment (see on this label).*  
 P332+P313 *If skin irritation occurs: 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 RTECS: QU5775000	nitric acid Ox. Liq. 3, H272; Acute Tox. 3, H331; Met. Corr.1, H290; Skin Corr. 1A, H314	<5%
CAS: 7664-39-3 RTECS: MW7875000	hydrofluoric acid Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; Skin Corr. 1A, H314	<0.25%

- **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. Then consult a doctor.
- **After swallowing:** Rinse mouth. Do not induce vomiting.

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**Product name: IntelliQuant Multi-Element Standard 6 [100mL Bottle]**

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- **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:** 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.  
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 <sup>3</sup>
CAS: 7440-32-6	Titanium	30 mg/m <sup>3</sup>
CAS: 7440-33-7	Tungsten	10 mg/m <sup>3</sup>
CAS: 7440-36-0	Antimony	1.5 mg/m <sup>3</sup>
CAS: 7440-56-4	Germanium	3.2 mg/m <sup>3</sup>
CAS: 7440-58-6	hafnium	1.5 mg/m <sup>3</sup>
CAS: 10026-12-7	niobium pentachloride	4.2 mg/m <sup>3</sup>
CAS: 14985-18-3	zirconyl nitrate hydrate	27 mg/m <sup>3</sup>
CAS: 16919-19-0	Ammonium silicofluoride	12 mg/m <sup>3</sup>

- **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 <sup>3</sup>

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**Product name: IntelliQuant Multi-Element Standard 6 [100mL Bottle]**

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CAS: 7440-32-6	Titanium	330 mg/m <sup>3</sup>
CAS: 7440-33-7	Tungsten	330 mg/m <sup>3</sup>
CAS: 7440-36-0	Antimony	13 mg/m <sup>3</sup>
CAS: 7440-56-4	Germanium	35 mg/m <sup>3</sup>
CAS: 7440-58-6	hafnium	17 mg/m <sup>3</sup>
CAS: 10026-12-7	niobium pentachloride	46 mg/m <sup>3</sup>
CAS: 14985-18-3	zirconyl nitrate hydrate	230 mg/m <sup>3</sup>
CAS: 16919-19-0	Ammonium silicofluoride	130 mg/m <sup>3</sup>

**· 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 <sup>3</sup>
CAS: 7440-32-6	Titanium	2,000 mg/m <sup>3</sup>
CAS: 7440-33-7	Tungsten	2,000 mg/m <sup>3</sup>
CAS: 7440-36-0	Antimony	80 mg/m <sup>3</sup>
CAS: 7440-56-4	Germanium	170 mg/m <sup>3</sup>
CAS: 7440-58-6	hafnium	99 mg/m <sup>3</sup>
CAS: 10026-12-7	niobium pentachloride	280 mg/m <sup>3</sup>
CAS: 14985-18-3	zirconyl nitrate hydrate	1,400 mg/m <sup>3</sup>
CAS: 16919-19-0	Ammonium silicofluoride	780 mg/m <sup>3</sup>

### 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.

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**Product name: IntelliQuant Multi-Element Standard 6 [100mL Bottle]**

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· **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<sup>3</sup>, 2 ppm

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

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

**CAS: 7664-39-3 hydrofluoric acid**

PEL Long-term value: 1 mg/m<sup>3</sup>, 3 ppm  
as F, sulfuric acid

REL Long-term value: 2.5 mg/m<sup>3</sup>, 3 ppm  
Ceiling limit value: 5 mg/m<sup>3</sup>, 6 ppm  
15-min, as F

TLV Long-term value: 0.41 mg/m<sup>3</sup>, 0.5 ppm  
Ceiling limit value: 1.64 mg/m<sup>3</sup>, 2 ppm  
as F; Skin, BEI

· **Ingredients with biological limit values:**

**CAS: 7664-39-3 hydrofluoric acid**

BEI 3 mg/g creatinine  
Medium: urine  
Time: prior to shift  
Parameter: Fluorides (background, nonspecific)

10 mg/g creatinine  
Medium: urine  
Time: end of shift  
Parameter: Fluorides (background, nonspecific)

· **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:**

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: IntelliQuant Multi-Element Standard 6 [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.

Not determined.

**Boiling point/Boiling range:** Not determined.

- **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:** Not determined.

- **Density:** Not determined.

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**Product name: IntelliQuant Multi-Element Standard 6 [100mL Bottle]**

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· <b>Relative density</b>	<i>Not determined.</i>
· <b>Vapor density</b>	<i>Not determined.</i>
· <b>Evaporation rate</b>	<i>Not determined.</i>
· <b>Solubility in / Miscibility with Water:</b>	<i>Not miscible or difficult to mix.</i>
· <b>Partition coefficient (n-octanol/water):</b>	<i>Not determined.</i>
· <b>Viscosity:</b>	
<b>Dynamic:</b>	<i>Not determined.</i>
<b>Kinematic:</b>	<i>Not determined.</i>
· <b>Solvent content:</b>	
<b>VOC content:</b>	<i>0.00 %</i>
· <b>Other information</b>	<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: 7697-37-2 nitric acid**

Inhalative	LC50/4 h	2.65 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.*  
*Causes serious eye damage.*
- **Sensitization:** *No sensitizing effects known.*
- **Additional toxicological information:**  
*The product shows the following dangers according to internally approved calculation methods for preparations:*  
*Irritant*

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## Safety Data Sheet

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**Product name: IntelliQuant Multi-Element Standard 6 [100mL Bottle]**

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· **Carcinogenic categories**

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

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

None of the ingredients is listed.

### 12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

**CAS: 7697-37-2 nitric acid**

LC50/48 180 mg/l (crustacean)

· **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.

### 14 Transport information

· **UN-Number**

· **DOT, ADR, IMDG, IATA**

· **DOT**

UN3264

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

(Contd. on page 9)

## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 11/02/2021

Reviewed on 11/02/2021

**Product name: IntelliQuant Multi-Element Standard 6 [100mL Bottle]**

(Contd. of page 8)

· **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)

· **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· **Hazard identification number (Kemler code):** 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, HYDROFLUORIC ACID), 8, III

### 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
No further relevant information available.

(Contd. on page 10)

## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 11/02/2021

Reviewed on 11/02/2021

**Product name: IntelliQuant Multi-Element Standard 6 [100mL Bottle]**

(Contd. of page 9)

· **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: 7664-39-3	hydrofluoric acid
----------------	-------------------

CAS: 7440-36-0	Antimony
----------------	----------

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

CAS: 7732-18-5	Water	ACTIVE
----------------	-------	--------

CAS: 7697-37-2	nitric acid	ACTIVE
----------------	-------------	--------

CAS: 7664-39-3	hydrofluoric acid	ACTIVE
----------------	-------------------	--------

CAS: 7440-31-5	Tin	ACTIVE
----------------	-----	--------

CAS: 7440-32-6	Titanium	ACTIVE
----------------	----------	--------

CAS: 7440-33-7	Tungsten	ACTIVE
----------------	----------	--------

CAS: 7440-36-0	Antimony	ACTIVE
----------------	----------	--------

CAS: 7440-56-4	Germanium	ACTIVE
----------------	-----------	--------

CAS: 7440-58-6	hafnium	ACTIVE
----------------	---------	--------

CAS: 7721-01-9	Tantalum pentachloride	ACTIVE
----------------	------------------------	--------

CAS: 10026-12-7	niobium pentachloride	ACTIVE
-----------------	-----------------------	--------

CAS: 16919-19-0	Ammonium silicofluoride	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)**

None of the ingredients is listed.

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

None of the ingredients is listed.

(Contd. on page 11)

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

Printing date 11/02/2021

Reviewed on 11/02/2021

**Product name: IntelliQuant Multi-Element Standard 6 [100mL Bottle]**

(Contd. of page 10)

**· Hazard pictograms**

GHS05

**· Signal word** *Danger***· Hazard-determining components of labeling:***nitric acid***· Hazard statements***H290 May be corrosive to metals.**H315 Causes skin irritation.**H318 Causes serious eye damage.***· 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.**P310 Immediately call a poison center/doctor.**P321 Specific treatment (see on this label).**P332+P313 If skin irritation occurs: 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.*

**· Contact:****· Date of preparation / last revision** 11/02/2021 / -**· Abbreviations and acronyms:***ADR: Accord relatif au transport international 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**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. 3: Oxidizing liquids – Category 3**Met. Corr. 1: Corrosive to metals – Category 1*

(Contd. on page 12)

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

Printing date 11/02/2021

Reviewed on 11/02/2021

**Product name: IntelliQuant Multi-Element Standard 6 [100mL Bottle]**

(Contd. of page 11)

*Acute Tox. 2: Acute toxicity – Category 2*  
*Acute Tox. 1: Acute toxicity – Category 1*  
*Acute Tox. 3: Acute toxicity – Category 3*  
*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*

**· 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 11/03/2021

Reviewed on 11/03/2021

### 1 Identification

- **Product identifier**
- **Product name: IntelliQuant Multi-Element Standard 7 [100 mL bottle]**
- **Part number:** 5191-3939
- **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](mailto: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

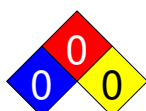
*Met. Corr.1 H290 May be corrosive to metals.*

- **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  
 Fire = 0  
 Reactivity = 0

(Contd. on page 2)

## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 11/03/2021

Reviewed on 11/03/2021

**Product name: IntelliQuant Multi-Element Standard 7 [100 mL 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.  
Do not allow to enter sewers/ surface or ground water.

(Contd. on page 3)

## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 11/03/2021

Reviewed on 11/03/2021

**Product name: IntelliQuant Multi-Element Standard 7 [100 mL bottle]**

(Contd. of page 2)

· **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: 7440-05-3	Palladium	6 mg/m <sup>3</sup>
CAS: 7440-06-4	Platinum	3 mg/m <sup>3</sup>
CAS: 7440-57-5	Gold	0.46 mg/m <sup>3</sup>

· **PAC-2:**

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

· **PAC-3:**

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

### 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 11/03/2021

Reviewed on 11/03/2021

**Product name: IntelliQuant Multi-Element Standard 7 [100 mL 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/m<sup>3</sup>, 5 ppm

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

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

- **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

**Color:** Colorless

(Contd. on page 5)

## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 11/03/2021

Reviewed on 11/03/2021

**Product name: IntelliQuant Multi-Element Standard 7 [100 mL bottle]**

(Contd. of page 4)

· <b>Odor:</b>	<i>Odorless</i>
· <b>Odor threshold:</b>	<i>Not determined.</i>
· <b>pH-value:</b>	<i>&lt; 2</i>
· <b>Change in condition</b>	
<b>Melting point/Melting range:</b>	<i>Not determined.</i>
<b>Boiling point/Boiling range:</b>	<i>Not determined.</i>
· <b>Flash point:</b>	<i>Not applicable.</i>
· <b>Flammability (solid, gaseous):</b>	<i>Not determined.</i>
· <b>Ignition temperature:</b>	<i>Not determined</i>
· <b>Decomposition temperature:</b>	<i>Not determined.</i>
· <b>Auto igniting:</b>	<i>Product is not selfigniting.</i>
· <b>Danger of explosion:</b>	<i>Not determined.</i>
· <b>Explosion limits:</b>	
<b>Lower:</b>	<i>Not determined.</i>
<b>Upper:</b>	<i>Not determined.</i>
· <b>Vapor pressure:</b>	<i>Not determined.</i>
· <b>Density:</b>	<i>Not determined.</i>
· <b>Relative density</b>	<i>Not determined.</i>
· <b>Vapor density</b>	<i>Not determined.</i>
· <b>Evaporation rate</b>	<i>Not determined.</i>
· <b>Solubility in / Miscibility with Water:</b>	<i>Fully miscible.</i>
· <b>Partition coefficient (n-octanol/water):</b>	<i>Not determined.</i>
· <b>Viscosity:</b>	
<b>Dynamic:</b>	<i>Not determined.</i>
<b>Kinematic:</b>	<i>Not determined.</i>
· <b>Other information</b>	<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.*

(Contd. on page 6)

## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 11/03/2021

Reviewed on 11/03/2021

**Product name: IntelliQuant Multi-Element Standard 7 [100 mL bottle]**

(Contd. of page 5)

- **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:** No sensitizing effects known.
- **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

- **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.

(Contd. on page 7)

## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 11/03/2021

Reviewed on 11/03/2021

**Product name: IntelliQuant Multi-Element Standard 7 [100 mL bottle]**

(Contd. of page 6)

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

- **Transport hazard class(es)**
- **DOT**



- **Class**
  - **Label**
- 8 Corrosive substances  
 8

- **ADR, IMDG, IATA**



- **Class**
  - **Label**
- 8 Corrosive substances  
 8

- **Packing group**
- **DOT, ADR, IMDG, IATA**

II

- **Environmental hazards:**
- Not applicable.*

- **Special precautions for user**
  - **Hazard identification number (Kemler code):**
  - **EMS Number:**
  - **Segregation groups**
  - **Stowage Category**
  - **Stowage Code**
- Warning: Corrosive substances  
 80  
 F-A,S-B  
 Acids  
 A  
 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: E2  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 500 ml

(Contd. on page 8)

## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 11/03/2021

Reviewed on 11/03/2021

**Product name: IntelliQuant Multi-Element Standard 7 [100 mL bottle]**

(Contd. of page 7)

· 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**

No further relevant information available.

· **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: 7732-18-5 Water

ACTIVE

CAS: 7647-01-0 Hydrochloric acid

ACTIVE

CAS: 7440-05-3 Palladium

ACTIVE

CAS: 7440-06-4 Platinum

ACTIVE

CAS: 7440-57-5 Gold

ACTIVE

CAS: 12125-08-5 Diammonium hexachloroosmate

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)**

CAS: 7647-01-0 Hydrochloric acid

A4

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

None of the ingredients is listed.

(Contd. on page 9)

## Safety Data Sheet

*acc. to OSHA HCS*

Printing date 11/03/2021

Reviewed on 11/03/2021

**Product name: IntelliQuant Multi-Element Standard 7 [100 mL bottle]**

(Contd. of page 8)

· **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.

· **Contact:**

· **Date of preparation / last revision** 11/03/2021 / -

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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

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

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 11/03/2021

Reviewed on 11/03/2021

### 1 Identification

- **Product identifier**
- **Product name: Calibration blank solution 5pct HNO<sub>3</sub> [500 mL bottle]**
- **Part number:** 5190-7001
- **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](mailto: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

Skin Irrit. 2 H315 Causes skin irritation.

- **Label elements**

- **GHS label elements**

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

- **Hazard pictograms**



GHS05

- **Signal word** Danger

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

nitric acid

- **Hazard statements**

H290 May be corrosive to metals.

H315 Causes skin irritation.

H318 Causes serious eye damage.

- **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.

P310 Immediately call a poison center/doctor.

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- P321 Specific treatment (see on this label).
- P332+P313 If skin irritation occurs: 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	<5%
RTECS: QU5775000	Ox. Liq. 3, H272; Acute Tox. 3, H331; 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. Then 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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- **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.  
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.  
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
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· **PAC-2:**

CAS: 7697-37-2	nitric acid	24 ppm
----------------	-------------	--------

· **PAC-3:**

CAS: 7697-37-2	nitric acid	92 ppm
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#### 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.

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- 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 long-term and short-term values in mg/m³ and 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:
Breathing equipment:
Protection of hands:



Protective gloves

- Material of gloves
Penetration time of glove material

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**Product name: Calibration blank solution 5pct HNO<sub>3</sub> [500 mL bottle]**

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· **Eye protection:**

Tightly sealed goggles

### 9 Physical and chemical properties

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

· <b>Form:</b>	Liquid
· <b>Color:</b>	Colorless
· <b>Odor:</b>	Odorless
· <b>Odor threshold:</b>	Not determined.

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

· <b>Melting point/Melting range:</b>	Not determined.
· <b>Boiling point/Boiling range:</b>	Not determined.

· **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:**

· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.

· **Vapor pressure:** Not determined.· **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:**

· <b>Dynamic:</b>	Not determined.
· <b>Kinematic:</b>	Not determined.

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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 2.65 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.

Sensitization: No sensitizing effects known.

Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Irritant

Carcinogenic categories

IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

NTP (National Toxicology Program)

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

US

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### 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

**CAS: 7697-37-2 nitric acid**

**LC50/48** 180 mg/l (crustacean)

- **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)

- **ADR**

3264 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

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· <b>Label</b>	8
· <b>ADR, IMDG, IATA</b>	
	
· <b>Class</b>	8 Corrosive substances
· <b>Label</b>	8
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	III
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b>	Warning: Corrosive substances
· <b>Hazard identification number (Kemler code):</b>	80
· <b>EMS Number:</b>	F-A,S-B
· <b>Segregation groups</b>	Acids
· <b>Stowage Category</b>	D
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	
Not applicable.	
· <b>Transport/Additional information:</b>	
· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	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**  
No further relevant information available.
- **Sara**

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

CAS: 7697-37-2	nitric acid
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· **Section 313 (Specific toxic chemical listings):**

CAS: 7697-37-2	nitric acid
----------------	-------------

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

All components have the value ACTIVE.
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· **Hazardous Air Pollutants**

None of the ingredients is listed.
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· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.
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· **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)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Hazard pictograms**



GHS05

· **Signal word** *Danger*

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

nitric acid

· **Hazard statements**

H290 May be corrosive to metals.

H315 Causes skin irritation.

H318 Causes serious eye damage.

· **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.

P310 Immediately call a poison center/doctor.

P321 Specific treatment (see on this label).

P332+P313 If skin irritation occurs: 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.

· **Contact:**

· **Date of preparation / last revision** 11/03/2021 / -

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

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*IMDG: International Maritime Code for Dangerous Goods*  
*DOT: US Department of Transportation*  
*IATA: International Air Transport Association*  
*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)*  
*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. 3: Oxidizing liquids – Category 3*  
*Met. Corr. 1: Corrosive to metals – Category 1*  
*Acute Tox. 3: Acute toxicity – Category 3*  
*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*

**• 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