

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

- **PAC-2:**

CAS: 7697-37-2	nitric acid	24 ppm
CAS: 7664-39-3	hydrofluoric acid	24 ppm
CAS: 7440-31-5	Tin	67 mg/m ³

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

· PAC-3:

CAS: 7697-37-2	nitric acid	92 ppm
CAS: 7664-39-3	hydrofluoric acid	44 ppm
CAS: 7440-31-5	Tin	400 mg/m ³
CAS: 7440-32-6	Titanium	2,000 mg/m ³
CAS: 7440-33-7	Tungsten	2,000 mg/m ³
CAS: 7440-36-0	Antimony	80 mg/m ³
CAS: 7440-56-4	Germanium	170 mg/m ³
CAS: 7440-58-6	hafnium	99 mg/m ³
CAS: 10026-12-7	niobium pentachloride	280 mg/m ³
CAS: 14985-18-3	zirconyl nitrate hydrate	1,400 mg/m ³
CAS: 16919-19-0	Ammonium silicofluoride	780 mg/m ³

7 Handling and storage

· Handling:

- **Precautions for safe handling** Store in cool, dry place in tightly closed receptacles.
- **Information about protection against explosions and fires:** No special measures required.

· Conditions for safe storage, including any incompatibilities
· Storage:
· Requirements to be met by storerooms and receptacles:

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

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

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

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

- **Further information about storage conditions:** Keep receptacle tightly sealed.

- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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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

CAS: 7664-39-3 hydrofluoric acid

PEL Long-term value: 1 mg/m³, 3 ppm
as F, sulfuric acid

REL Long-term value: 2.5 mg/m³, 3 ppm
Ceiling limit value: 5 mg/m³, 6 ppm
15-min, as F

TLV Long-term value: 0.41 mg/m³, 0.5 ppm
Ceiling limit value: 1.64 mg/m³, 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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The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374



Protective gloves

- **Material of gloves**

PVC gloves

Neoprene gloves

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

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

- **pH-value:** < 2

- **Change in condition**

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

10 Stability and reactivity

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

11 Toxicological information

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

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

CAS: 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:** *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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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)

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<ul style="list-style-type: none"> · ADR · IMDG, IATA 	<p>3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROFLUORIC ACID)</p> <p>CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROFLUORIC ACID)</p>
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- **Transport hazard class(es)**

- **DOT**



<ul style="list-style-type: none"> · Class · Label 	<p>8 Corrosive substances</p> <p>8</p>
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- **ADR, IMDG, IATA**



<ul style="list-style-type: none"> · Class · Label 	<p>8 Corrosive substances</p> <p>8</p>
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- **Packing group**

<ul style="list-style-type: none"> · DOT, ADR, IMDG, IATA 	<p>III</p>
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<ul style="list-style-type: none"> · Environmental hazards: 	<p>Not applicable.</p>
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<ul style="list-style-type: none"> · Special precautions for user 	<p>Warning: Corrosive substances</p>
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<ul style="list-style-type: none"> · Hazard identification number (Kemler code): 	<p>80</p>
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<ul style="list-style-type: none"> · EMS Number: 	<p>F-A,S-B</p>
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<ul style="list-style-type: none"> · Segregation groups 	<p>Acids</p>
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<ul style="list-style-type: none"> · Stowage Category 	<p>A</p>
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<ul style="list-style-type: none"> · Stowage Code 	<p>SW2 Clear of living quarters.</p>
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<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	<p>Not applicable.</p>
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- **Transport/Additional information:**

- **ADR**

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

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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)**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*

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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