Kit Name: IntelliQuant Calibration Kit

Kit PN: 5190-9425

This product is a kit, composed of the following individual chemical components:

Kit Components

<table>
<thead>
<tr>
<th>Component Part Number</th>
<th>Component Name</th>
<th>Volume or mass/container</th>
<th>No. of component containers/kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>5190-9422</td>
<td>IntelliQuant Multi-element Standard #1</td>
<td>500 mL</td>
<td>1</td>
</tr>
<tr>
<td>5190-9423</td>
<td>IntelliQuant Multi-element Standard #2</td>
<td>500 mL</td>
<td>1</td>
</tr>
<tr>
<td>5190-9424</td>
<td>IntelliQuant Multi-element Standard #3</td>
<td>500 mL</td>
<td>1</td>
</tr>
<tr>
<td>5190-7001</td>
<td>Calibration Blank Solution for ICP-OES, MP-AES, and AAS</td>
<td>500 mL</td>
<td>1</td>
</tr>
</tbody>
</table>

SDSs for each component follow this cover sheet.

Transportation Information for the Kit:

Proper Shipping Names:

<table>
<thead>
<tr>
<th>DOT</th>
<th>IATA/ICAO</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Hydrochloric acid), 8, III</td>
<td>UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Hydrochloric acid), 8, III</td>
<td>UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Hydrochloric acid), 8, III</td>
</tr>
</tbody>
</table>
1 Identification

- **Product identifier**
- **Product name:** IntelliQuant Multi-element Standard #1 [500 mL bottle]
- **Part number:** 5190-9422
- **Application of the substance / the mixture** Reference material for laboratory use only
- **Manufacturer/Supplier:**
  Agilent Technologies, Inc.
  5301 Stevens Creek Blvd.
  Santa Clara, CA 95051
  USA
- **Information department:** e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS05 Corrosion
    - 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 statements**
  - H315 Causes skin irritation.
  - H318 Causes serious eye damage.
- **Precautionary statements**
  - P280 Wear protective gloves.
  - P280 Wear 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.

(Contd. on page 2)
Product name: IntelliQuant Multi-element Standard #1 [500 mL bottle]

Classification system:
- NFPA ratings (scale 0 - 4)
  - Health = 1
  - Fire = 0
  - Reactivity = 0
- HMIS-ratings (scale 0 - 4)
  - Health = 1
  - Fire = 0
  - Reactivity = 0

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

3 Composition/information on ingredients
- Chemical characterization: Mixtures
- Description:
  Aqueous solution.
  Mixture: consisting of the following components.

Dangerous components:
- CAS: 7697-37-2
- RTECS: QU5775000
- Nitric acid
- Ox. Liq. 2, H272
- Skin Corr. 1A, H314
- < 5%

Additional information:
The acid % value is calculated as an absolute (mass) concentration. This may differ from the labelled acid concentration, which is expressed as a volume fraction.

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.
    - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

(Contd. of page 1)

(Contd. of page 3)
5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents:
    - CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  - Special hazards arising from the substance or mixture
    - 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.

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:
    - Store in a cool location.
    - Please refer to the manufacturers certificate for specific storage and transport temperature conditions.
    - Store only in the original receptacle.
    - 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.
Product name: IntelliQuant Multi-element Standard #1 [500 mL bottle]

- **Control parameters**

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

<table>
<thead>
<tr>
<th>Component</th>
<th>PEL Long-term value</th>
<th>REL Short-term value</th>
<th>TLV Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2 Nitric acid</td>
<td>5 mg/m³, 2 ppm</td>
<td>10 mg/m³, 4 ppm</td>
<td>10 mg/m³, 4 ppm</td>
</tr>
<tr>
<td></td>
<td>5 mg/m³, 2 ppm</td>
<td></td>
<td>5.2 mg/m³, 2 ppm</td>
</tr>
</tbody>
</table>

- **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.

  - **Protection of hands:**
    - Chemical-resistant, impervious gloves with an approved standards should be worn at all times.
    - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

  - **Material of gloves**
    - PVC gloves
    - Neoprene gloves

  - **Penetration time of glove material**
    - The protection time of the gloves can not be accurately estimated for mixtures consisting of several substances.
    - Refer to and observe manufacturers break through times of the protective gloves.

  - **Eye protection:**

    - Tightly sealed goggles

---

**9 Physical and chemical properties**

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

  - **General Information**

    - **Appearance:**
      - Form: Liquid
      - Color: Grey
      - Odor: Odorless
### 42.2.25

- **Odor threshold:** Not determined.
- **pH-value:** < 2
- **Change in condition**
  - Melting point/Melting range: Not determined.
  - Boiling point/Boiling range: 100 °C (212 °F)
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not determined.
- **Ignition temperature:** Not determined.
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Product is not selfigniting.
- **Danger of explosion:** Not determined.
- **Explosion limits:**
  - Lower: Not determined.
  - Upper: Not determined.
- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17 mm Hg)
- **Density at 20 °C (68 °F):** 1.02164 g/cm³ (8.526 lbs/gal)
- **Relative density**
  - Not determined.
- **Vapor density**
  - Not determined.
- **Evaporation rate**
  - Not determined.
- **Solubility in / Miscibility with Water:** Not miscible or difficult to mix.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- **Other information**
  - No further relevant information available.

### 10 Stability and reactivity

- **Reactivity** Stable under normal conditions.
- **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.
- **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:**
    - **7697-37-2 Nitric acid**
    - Inhalative LC50/4 h 130 mg/l (rat)
  - **Primary irritant effect:**
    - **on the skin:**
      - Irritant to skin and mucous membranes.
      - Based on available data, the classification criteria are not met.
    - **on the eye:**
      - Strong irritant with the danger of severe eye injury.
      - Based on available data, the classification criteria are not met.
  - **Sensitization:**
    - Based on available data, the classification criteria are not met.
  - **Additional toxicological information:**
    - The product shows the following dangers according to internally approved calculation methods for preparations:
      - 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:**
    - **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.
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**
  UN3264

- DOT, ADR, IMDG, IATA
  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)**
  
  ADR, IMDG, IATA

  - **Class**
    8 Corrosive substances

  - **Label**
    8

  - **Packing group**
    II

  - **Environmental hazards:**
    Not applicable.

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

  - **Danger code (Kemler):**
    80

  - **EMS Number:**
    F-A.S-B

  - **Segregation groups**
    Acids

  - **Stowage Category**
    B

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
  Not applicable.

- **UN "Model Regulation":**
  UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), 8, II
15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture
  · Sara
  · Section 355 (extremely hazardous substances):
    7697-37-2 Nitric acid
  · Section 313 (Specific toxic chemical listings):
    7697-37-2 Nitric acid
  · TSCA (Toxic Substances Control Act):
    All ingredients are listed.
  · Proposition 65
    · Chemicals known to cause cancer:
      None of the ingredients is listed.
    · Chemicals known to cause reproductive toxicity for females:
      None of the ingredients is listed.
    · Chemicals known to cause reproductive toxicity for males:
      None of the ingredients is listed.
    · Chemicals known to cause developmental toxicity:
      None of the ingredients is listed.

· Carcinogenic categories
  · EPA (Environmental Protection Agency)
    None of the ingredients is listed.
  · TLV (Threshold Limit Value established by ACGIH)
    None of the ingredients is listed.
  · NIOSH-Ca (National Institute for Occupational Safety and Health)
    None of the ingredients is listed.

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

GHS05

· Signal word Danger
· Hazard statements
  H315 Causes skin irritation.
  H318 Causes serious eye damage.
· Precautionary statements
  P280 Wear protective gloves.
  P280 Wear 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.

(Contd. on page 9)
Product name: IntelliQuant Multi-element Standard #1 [500 mL bottle]

42.2.25

P321 Specific treatment (see on this label).
P332+P313 If skin irritation occurs: Get medical advice/attention.

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

16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

Date of preparation / last revision 07/08/2016 /

Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Ox. Liq. 2: Oxidizing liquids – Category 2
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

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

- **Product identifier**
- **Product name:** IntelliQuant Multi-element Standard #2 [500 mL bottle]
- **Part number:** 5190-9423
- **Application of the substance / the mixture** Reference material for laboratory use only
- **Manufacturer/Supplier:**
  Agilent Technologies, Inc.
  5301 Stevens Creek Blvd.
  Santa Clara, CA 95051
  USA
- **Information department:** e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS05 Corrosion
  - Eye Dam. 1  H318  Causes serious eye damage.
  - GHS07
  - Acute Tox. 4  H302  Harmful if swallowed.
  - Acute Tox. 4  H312  Harmful in contact with skin.
  - Acute Tox. 4  H332  Harmful if inhaled.
  - Skin Irrit. 2  H315  Causes skin irritation.

- **Label elements**

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

- **Signal word** Danger

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

- **Hazard statements**
  - H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.
  - H315  Causes skin irritation.
  - H318  Causes serious eye damage.

- **Precautionary statements**
  - P261  Avoid breathing dust/fume/gas/mist/vapors/spray
  - P280  Wear protective gloves / protective clothing.

(Contd. on page 2)
Product name: IntelliQuant Multi-element Standard #2 [500 mL bottle]

(Contd. of page 1)

- Classification system:
  - NFPA ratings (scale 0 - 4)
    - Health = 3
    - Fire = 0
    - Reactivity = 0

- HMIS-ratings (scale 0 - 4)
  - Health = 3
  - Fire = 0
  - Reactivity = 0

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

3 Composition/information on ingredients

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

- Dangerous components:
  - CAS: 7697-37-2
  - RTECS: QU577500
  - Nitreric acid
  - Ox. Liq. 2, H272; Skin Corr. IA, H314 < 5%

- Additional information:
The acid % value is calculated as an absolute (mass) concentration. This may differ from the labelled acid concentration, which is expressed as a volume fraction.

4 First-aid measures

- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation:
  Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
  In case of unconsciousness place patient stably in side position for transportation.
  Seek medical treatment.
42.2.25

· After skin contact:
  Immediately wash with water and soap and rinse thoroughly.
  Seek medical treatment.
  If skin irritation continues, consult a doctor.
· After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
· After swallowing:
  Rinse mouth. Do not induce vomiting.
  Seek medical treatment.
· Information for doctor:
  Most important symptoms and effects, both acute and delayed No further relevant information available.
  Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

· Extinguishing media
  · Suitable extinguishing agents:
    CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  · Special hazards arising from the substance or mixture
    Formation of toxic gases is possible during heating or in case of fire.
· Advice for firefighters
  · Protective equipment:
    Mouth respiratory protective device.
    Wear self-contained respirator protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.
· Environmental precautions:
  Dilate with plenty of water.
  Do not allow to enter sewers/surface or ground water.
· Methods and material for containment and cleaning up:
  Use neutralizing agent.
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
  Absorb liquid components with liquid-binding material.
  DO NOT USE SAWDUST.
· Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

· Handling:
  · Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Store in cool, dry place in tightly closed receptacles.
8 Exposure controls/personal protection

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

- Control parameters

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

<table>
<thead>
<tr>
<th>Component</th>
<th>PEL Long-term value:</th>
<th>REL Short-term value:</th>
<th>TLV Short-term value:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2 Nitric acid</td>
<td>5 mg/m³, 2 ppm</td>
<td>10 mg/m³, 4 ppm</td>
<td>10 mg/m³, 4 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5.2 mg/m³, 2 ppm</td>
</tr>
</tbody>
</table>

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

- Exposure controls

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

- Breathing equipment:
  - In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

- Protection of hands:
  - Chemical-resistant, impervious gloves with an approved standards should be worn at all times.
  - The selection of the glove material is based on the penetration times, rates of diffusion and its degradation

  Protective gloves

- Material of gloves
  - PVC gloves
  - Neoprene gloves
Product name: IntelliQuant Multi-element Standard #2 [500 mL bottle]

- **Penetration time of glove material**
  The protection time of the gloves can not be accurately estimated for mixtures consisting of several substances.
  Refer to and observe manufacturers break through times of the protective gloves.

- **Eye protection:**
  Tightly sealed goggles

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  **General Information**
  **Appearance:**
  - Form: Liquid
  - Color: Clear
  - Odor: Odorless
  - Odor threshold: Not determined.

- **pH-value:** < 2

- **Change in condition**
  - Melting point/Melting range: Not determined.
  - Boiling point/Boiling range: 100 °C (212 °F)

- **Flash point:** Not applicable.

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

- **Ignition temperature:** Not determined

- **Decomposition temperature:** Not determined.

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

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

- **Explosion limits:**
  - Lower: Not determined.
  - Upper: Not determined.

- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17 mm Hg)

- **Density:** Not determined.
  - Relative density: Not determined.
  - Vapor density: Not determined.
  - Evaporation rate: Not determined.

- **Solubility in / Miscibility with Water:** Fully miscible.

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

- **Viscosity:**
  - Dynamic: Not determined.
10 Stability and reactivity

- **Reactivity** Stable under normal conditions.
- **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.
- **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:**
    - 7697-37-2 Nitric acid
      - Inhalative LC50/4 h 130 mg/l (rat)
    - 7664-39-3 Hydrofluoric acid -
      - Oral LD50 1276 mg/kg (rat)
  - **Primary irritant effect:**
    - **on the skin:**
      Irritant to skin and mucous membranes.
      Based on available data, the classification criteria are not met.
    - **on the eye:**
      Strong irritant with the danger of severe eye injury.
      Based on available data, the classification criteria are not met.
    - **Sensitization:** Based on available data, the classification criteria are not met.
  - **Additional toxicological information:**
    The product shows the following dangers according to internally approved calculation methods for preparations:
    Harmful
    Irritant
- **Carcinogenic categories**
  - **IARC (International Agency for Research on Cancer)**
    None of the ingredients is listed.
  - **NTP (National Toxicology Program)**
    None of the ingredients is listed.
  - **OSHA-Ca (Occupational Safety & Health Administration)**
    None of the ingredients is listed.
12 Ecological information

- Toxicity
  - Aquatic toxicity:
    - 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 2 (Self-assessment): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Must not reach bodies of water or drainage ditch undiluted or unneutralized.
    Danger to drinking water if even small quantities leak into the ground.

- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - 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: UN3264
  - DOT, ADR, IMDG, IATA: Corrosive liquid, acidic, inorganic, n.o.s. (Hydrofluoric acid, Nitric acid)

- DOT
  - ADR
    - 3264: Corrosive liquid, acidic, inorganic, n.o.s. (Hydrofluoric acid, Nitric acid)

- IMDG, IATA
  - CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROFLUORIC ACID, NITRIC ACID)
Product name: IntelliQuant Multi-element Standard #2 [500 mL bottle]

- Transport hazard class(es)
  - DOT
  - Class 8 Corrosive substances
  - Label 8

- ADR, IMDG, IATA
  - Class 8 Corrosive substances
  - Label 8

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

- Environmental hazards: Not applicable.
  - Special precautions for user Warning: Corrosive substances
  - Danger code (Kemler): 88
  - EMS Number: F-A.S-B
  - Segregation groups Acids
  - Stowage Category B
  - Stowage Code SW2 Clear of living quarters.

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.
  - UN "Model Regulation": UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROFLUORIC ACID, NITRIC ACID), 8, II

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
  - Section 355 (extremely hazardous substances):
    - 7697-37-2 Nitric acid
    - 7664-39-3 Hydrofluoric acid -
  - Section 313 (Specific toxic chemical listings):
    - 7697-37-2 Nitric acid
    - 7664-39-3 Hydrofluoric acid -
  - TSCA (Toxic Substances Control Act):
    - All ingredients are listed.
Product name: IntelliQuant Multi-element Standard #2 [500 mL bottle]

- Proposition 65
  - Chemicals known to cause cancer:
    None of the ingredients is listed.
  - Chemicals known to cause reproductive toxicity for females:
    None of the ingredients is listed.
  - Chemicals known to cause reproductive toxicity for males:
    None of the ingredients is listed.
  - Chemicals known to cause developmental toxicity:
    None of the ingredients is listed.

- Carcinogenic categories
  - EPA (Environmental Protection Agency)
    None of the ingredients is listed.
  - TLV (Threshold Limit Value established by ACGIH)
    None of the ingredients is listed.
  - NIOSH-Ca (National Institute for Occupational Safety and Health)
    None of the ingredients is listed.

- GHS label elements
  The product is classified and labeled according to the Globally Harmonized System (GHS).
  - Hazard pictograms
    ![GHS05](image) ![GHS07](image)
  - Signal word Danger

- Hazard-determining components of labeling:
  Hydrofluoric acid -

- Hazard statements
  H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
  H315 Causes skin irritation.
  H318 Causes serious eye damage.

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

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

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- Date of preparation / last revision 07/08/2016 / -

- Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  NIOSH: National Institute for Occupational Safety
  OSHA: Occupational Safety & Health
  TLV: Threshold Limit Value
  PEL: Permissible Exposure Limit
  REL: Recommended Exposure Limit
  BEI: Biological Exposure Limit
  Ox. Liq. 2: Oxidizing liquids – Category 2
  Acute Tox. 4: Acute toxicity – Category 4
  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

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

- **Product identifier**
- **Product name:** IntelliQuant Multi-element Standard #3 [500 mL bottle]
- **Part number:** 5190-9424
- **Application of the substance / the mixture** Reference material for laboratory use only
- **Manufacturer/Supplier:**
  Agilent Technologies, Inc.
  5301 Stevens Creek Blvd.
  Santa Clara, CA 95051
  USA
- **Information department:** e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**
  
  - GHS05 Corrosion

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

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

  - GHS05

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

(Contd. on page 2)
Product name: InteliQuant Multi-element Standard #3 [500 mL bottle]

- 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
  - RTECS: MW 9620000
  - hydrochloric acid
  - Skin Corr. 1B, H314; STOT SE 3, H335 < 5%

- Additional information:
  The acid % value is calculated as an absolute (mass) concentration. This may differ from the labelled acid concentration, which is expressed as a volume fraction.

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:
    - CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  - 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. of page 1)

(Contd. on page 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:**
    Store in a cool location.
    Please refer to the manufacturers certificate for specific storage and transport temperature conditions.
    Store only in the original receptacle.
  - **Information about storage in one common storage facility:** Store away from foodstuffs.
  - **Further information about storage conditions:** Keep receptacle tightly sealed.
  - **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

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

- **Control parameters**

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

<table>
<thead>
<tr>
<th>Substance</th>
<th>PEL Ceiling limit value</th>
<th>REL Ceiling limit value</th>
<th>TLV Ceiling limit value</th>
</tr>
</thead>
<tbody>
<tr>
<td>hydrochloric acid</td>
<td>7 mg/m³, 5 ppm</td>
<td>7 mg/m³, 5 ppm</td>
<td>2.98 mg/m³, 2 ppm</td>
</tr>
</tbody>
</table>

- **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:**
    In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
  - **Protection of hands:**
    Chemical-resistant, impervious gloves with an approved standards should be worn at all times.
The selection of the glove material is based on the penetration times, rates of diffusion and its degradation

Protective gloves

- Material of gloves
  - PVC gloves
  - Neoprene gloves
- Penetration time of glove material
  The protection time of the gloves can not be accurately estimated for mixtures consisting of several substances.
  Refer to and observe manufacturers break through times of the protective gloves.

Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

- Information on basic physical and chemical properties
  - General Information
    - Appearance:
      - Form: Liquid
      - Color: Orange
      - Odor: Odorless
      - Odor threshold: Not determined.
    - pH-value: < 2
  - Change in condition
    - Melting point/Melting range: Not determined.
    - Boiling point/Boiling range: 100 °C (212 °F)
  - Flash point: Not applicable.
  - Flammability (solid, gaseous): Not determined.
  - Ignition temperature: Not determined
  - Decomposition temperature: Not determined.
  - Auto igniting: Product is not selfigniting.
  - Danger of explosion: Not determined.
  - Explosion limits:
    - Lower: Not determined.
    - Upper: Not determined.
  - Vapor pressure at 20 °C (68 °F): 23 kPa (17 mm Hg)
  - Density: Not determined.
  - Relative density: Not determined.
10 Stability and reactivity

- Reactivity: Stable under normal conditions.
- 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.
- Hazardous decomposition products: Formation of toxic gases is possible during heating or in case of fire.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
  - Primary irritant effect:
    - on the skin: Based on available data, the classification criteria are not met.
    - on the eye: Based on available data, the classification criteria are not met.
  - Sensitization: Based on available data, the classification criteria are not met.
- Additional toxicological information:
  The product shows the following dangers according to internally approved calculation methods for preparations:
  - Carcinogenic categories
    - IARC (International Agency for Research on Cancer)
      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.
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
  - UN3264

- DOT, ADR, IMDG, IATA
  - DOT
    - Corrosive liquid, acidic, inorganic, n.o.s. (Hydrochloric acid)
  - ADR
    - 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Hydrochloric acid)
  - IMDG, IATA
    - CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROCHLORIC ACID)

- Transport hazard class(es)
- DOT
  - Class
    - 8 Corrosive substances
  - Label
    - 8

(Contd. on page 7)
Product name: IntelliQuant Multi-element Standard #3 [500 mL bottle]

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
    - Section 355 (extremely hazardous substances):
      7647-01-0 hydrochloric acid
    - Section 313 (Specific toxic chemical listings):
      7647-01-0 hydrochloric acid
  - TSCA (Toxic Substances Control Act):
    All ingredients are listed.
  - Proposition 65
    - Chemicals known to cause cancer:
      None of the ingredients is listed.
    - Chemicals known to cause reproductive toxicity for females:
      None of the ingredients is listed.
    - Chemicals known to cause reproductive toxicity for males:
      None of the ingredients is listed.
    - Chemicals known to cause developmental toxicity:
      None of the ingredients is listed.
Product name: IntelliQuant Multi-element Standard #3 [500 mL bottle]

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**
  None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH)**
  7647-01-0 hydrochloric acid A4

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**
  None of the ingredients is listed.

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

- **Hazard pictograms**
  GHS05

- **Signal word** 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.

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16 **Other information**

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Date of preparation / last revision** 07/08/2016

- **Abbreviations and acronyms:**
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  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
  LC50: Lethal concentration, 50 percent
  BEI: Biological Exposure Limit
Product name: IntelliQuant Multi-element Standard #3 [500 mL bottle]

Met. Corr. 1: Corrosive to metals – Category 1
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

Sources

Data compared to the previous version altered, All sections have been updated.
1 Identification

- **Product identifier**
- **Product name:** Calibration Blank Solution for ICP-OES, MP-AES & AAS [500 mL bottle]
- **Part number:** 5190-7001
- **Application of the substance / the mixture** Reference material for laboratory use only
- **Manufacturer/Supplier:** Agilent Technologies, Inc.
  5301 Stevens Creek Blvd.
  Santa Clara, CA 95051
  USA
- **Information department:** e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**
  
  GHS05 Corrosion

  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**
  - H315 Causes skin irritation.
  - H318 Causes serious eye damage.

- **Precautionary statements**
  - P280 Wear protective gloves.
  - P280 Wear 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.

(Contd. on page 2)
Product name: Calibration Blank Solution for ICP-OES, MP-AES & AAS [500 mL bottle]

- Classification system:
- NFPA ratings (scale 0 - 4)
  \[\begin{array}{c}
  \text{Health} = 2 \\
  \text{Fire} = 0 \\
  \text{Reactivity} = 0
  \end{array}\]
- HMIS-ratings (scale 0 - 4)
  \[\begin{array}{c}
  \text{Health} = 2 \\
  \text{Fire} = 0 \\
  \text{Reactivity} = 0
  \end{array}\]
- 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.

- Dangerous components:
  - CAS: 7697-37-2
  - RTECS: QU5775000
  - Nitric acid
  - Ox. Liq. 2, H272;
  - Skin Corr. 1A, H314 < 5%

4 First-aid measures

- Description of first aid measures
  - After inhalation: In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact:
    - Immediately wash with water and soap and rinse thoroughly.
    - If skin irritation continues, consult a doctor.
  - After eye contact:
    - Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - After swallowing: Rinse mouth. Do not induce vomiting.
  - Information for doctor:
    - Most important symptoms and effects, both acute and delayed No further relevant information available.
    - Indication of any immediate medical attention and special treatment needed
      - No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents:
    - CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  - Special hazards arising from the substance or mixture
    - Formation of toxic gases is possible during heating or in case of fire.

(Contd. of page 1)

(Contd. on page 3)
Product name: Calibration Blank Solution for ICP-OES, MP-AES & AA S [500 mL bottle]

6 Accidental release measures

- Protective equipment: Wear self-contained respiratory protective device.

7 Handling and storage

- Precautions for safe handling: Store in cool, dry place in tightly closed receptacles.

8 Exposure controls/personal protection

- Control parameters

  7697-37-2 Nitric acid

  - PEL: Long-term value: 5 mg/m³, 2 ppm
  - REL: Short-term value: 10 mg/m³, 4 ppm
  - TLV: Short-term value: 10 mg/m³, 4 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.
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:
Chemical-resistant, impervious gloves with an approved standards should be worn at all times.
The selection of the glove material is based on the penetration times, rates of diffusion and its degradation

Material of gloves
PVC gloves
Neoprene gloves

Penetration time of glove material
The protection time of the gloves can not be accurately estimated for mixtures consisting of several substances.
Refer to and observe manufacturers break through times of the protective gloves.

Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:
Form: Liquid
Color: Clear
Odor: Odorless
Odor threshold: Not determined.

pH-value at 20 °C (68 °F): < 2

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

Flash point: Not applicable.
Safety Data Sheet acc. to OSHA HCS

Printing date 07/08/2016 Reviewed on 07/08/2016

Product name: Calibration Blank Solution for ICP-OES, MP-AES & AAS [500 mL bottle]

42.2.25

- **Flammability (solid, gaseous):** Not determined.
- **Ignition temperature:**
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Product is not selfigniting.
- **Danger of explosion:** Not determined.
- **Explosion limits:**
  - Lower: Not determined.
  - Upper: Not determined.
- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17 mm Hg)
- **Density at 20 °C (68 °F):** 1 g/cm³ (8.345 lbs/gal)
- **Relative density** Not determined.
- **Vapor density** Not determined.
- **Evaporation rate** Not determined.
- **Solubility in / Miscibility with Water:** Fully miscible.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** Stable under normal conditions.
- **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:** Bases. Strong oxidizing agents.
- **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:**
  - 7697-37-2 Nitric acid
    - Inhalative LC50/4 h 130 mg/l (rat)

(Contd. on page 6)
42.2.25

· **Primary irritant effect:**
  
  · **on the skin:**
  Irritant to skin and mucous membranes.
  Based on available data, the classification criteria are not met.
  
  · **on the eye:**
  Strong irritant with the danger of severe eye injury.
  Based on available data, the classification criteria are not met.
  
  · **Sensitization:** Based on available data, the classification criteria are not met.
  
  · **Additional toxicological information:**
  The product shows the following dangers according to internally approved calculation methods for preparations:
  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.

12Ecological information

· **Toxicity**

  - **Aquatic toxicity:**
    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.
### 14 Transport information

- **UN-Number**: UN3264
- **DOT, ADR, IMDG, IATA**: Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)
- **ADR**
  - ID: 3264
  - Description: Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)
- **IMDG, IATA**
  - Description: 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: II

- **Environmental hazards**: No
- **Special precautions for user**: Warning: Corrosive substances
- **Danger code (Kemler)**: 80
- **EMS Number**: F-A,S-B
- **Segregation groups**: Acids
- **Stowage Category**: A

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

- Not applicable.

#### UN "Model Regulation"

- UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), 8, II
### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Sara**
    - Section 355 (extremely hazardous substances):
      - 7697-37-2 Nitric acid
  - Section 313 (Specific toxic chemical listings):
    - 7697-37-2 Nitric acid
  - **TSCA (Toxic Substances Control Act):**
    - All ingredients are listed.
  - **Proposition 65**
    - **Chemicals known to cause cancer:**
      - None of the ingredients is listed.
    - **Chemicals known to cause reproductive toxicity for females:**
      - None of the ingredients is listed.
    - **Chemicals known to cause reproductive toxicity for males:**
      - None of the ingredients is listed.
    - **Chemicals known to cause developmental toxicity:**
      - None of the ingredients is listed.

- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)**
    - None of the ingredients is listed.
  - **TLV (Threshold Limit Value established by ACGIH)**
    - None of the ingredients is listed.
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    - None of the ingredients is listed.

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

- **Hazard pictograms**

```
  GHS05
```

- **Signal word** Danger

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

- **Hazard statements**
  - **H315 Causes skin irritation.**
  - **H318 Causes serious eye damage.**

- **Precautionary statements**
  - P280 Wear protective gloves.
  - P280 Wear eye protection / face protection.
### 16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Date of preparation / last revision**: 07/08/2016 / 1
- **Abbreviations and acronyms**:
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - BEI: Biological Exposure Limit
  - Ox. Liq. 2: Oxidizing liquids – Category 2
  - 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**
  - **Data compared to the previous version altered**: All sections have been updated.

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### 42.2.25

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.

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