1 Identification

- **Product identifier**
  - **Product name:** Beryllium Standard: 1000 µg/mL Be in 5% HNO3 [100ml bottle]
  - **Part number:** 5190-8250
  - **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**
  - **GHS08 Health hazard**
  - Carc. 1B  H350  May cause cancer.
  - **GHS05 Corrosion**
  - Eye Dam. 1  H318  Causes serious eye damage.
  - **GHS07**
  - Skin Irrit. 2  H315  Causes skin irritation.
  - Skin Sens. 1  H317  May cause an allergic skin reaction.

- **Label elements**
  - **GHS label elements**
    - The product is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**
    - GHS05
    - GHS07
    - GHS08

- **Signal word** Danger

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

- **Hazard statements**
  - H315 Causes skin irritation.
  - H318 Causes serious eye damage.
  - H317 May cause an allergic skin reaction.
  - H350 May cause cancer.

- **Precautionary statements**
  - P261 Avoid breathing dust/fume/gas/mist/vapors/spray
  - P280 Wear protective gloves.
  - P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

(Contd. on page 2)
3. Composition/information on ingredients

- Chemical characterization: Mixtures
- Description:
  Aqueous solution.
  Mixture: consisting of the following components.

- Dangerous components:

<table>
<thead>
<tr>
<th>CAS</th>
<th>RTECS</th>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2</td>
<td>QU5775000</td>
<td>Nitric acid</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>19049-40-2</td>
<td>DS2900000</td>
<td>BERYLLIUM OXYACETATE</td>
<td>&lt; 0.1%</td>
</tr>
</tbody>
</table>

- Other hazards

4. First-aid measures

- Description of first aid measures
- General information:
  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.
- 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.
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 respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- 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:
  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.
  Open and handle receptacle with care.
  Prevent formation of aerosols.
- Information about protection against explosions and fires: Keep respiratory protective device available.
- 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.
- Control parameters
- Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Component</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid</td>
<td>Long-term value: 5 mg/m³, 2 ppm</td>
<td>Short-term value: 10 mg/m³, 4 ppm</td>
<td>Long-term value: 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.
    - Store protective clothing separately.
    - 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](image)

- 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

(Contd. on page 5)
### 4 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:**

<table>
<thead>
<tr>
<th>LD/LC50 values that are relevant for classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2 Nitric acid</td>
</tr>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Inhalative</td>
</tr>
</tbody>
</table>

- **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:
  - **Harmful**
  - **Irritant**
  - **Carcinogenic.**

- **Carcinogenic categories**
  - **IARC (International Agency for Research on Cancer)**
    - 19049-40-2 BERYLLIUM OXYACETATE
    - **I**
  - **NTP (National Toxicology Program)**
    - 19049-40-2 BERYLLIUM OXYACETATE
    - **K**
  - **OSHA-Ca (Occupational Safety & Health Administration)**
    - None of the ingredients is listed.

### 12 Ecological information

- **Toxicity**

<table>
<thead>
<tr>
<th>7697-37-2 Nitric acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50/48</td>
</tr>
<tr>
<td>180 mg/l (crustacean)</td>
</tr>
</tbody>
</table>

- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
  - **Bioaccumulative potential** No further relevant information available.
  - **Mobility in soil** No further relevant information available.

- **Additional ecological information:**
- **General notes:**
  - Water hazard class 1 (Self-assessment): slightly hazardous for water
  - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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

- **Other adverse effects** No further relevant information available.
### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
  Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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

### 14 Transport information

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN2031
- **DOT** Nitric acid solution
- **ADR** 2031 Nitric acid solution
- **IMDG, IATA** NITRIC ACID solution

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

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

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

- **Environmental hazards:**
- **Marine pollutant:** No

- **Special precautions for user**
  - **Warning:** Corrosive substances
  - **Danger code (Kemler):** 80
  - **EMS Number:** F-A.S-Q
  - **Segregation groups** Acids

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

- **UN "Model Regulation":** UN2031, Nitric acid solution, 8, II
**Product name:** Beryllium Standard: 1000 µg/mL Be in 5% HNO3 [100ml bottle]

### 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
  - 19049-40-2 BERYLLIUM OXYACETATE
- **TSCA (Toxic Substances Control Act):**
  - 7697-37-2 Nitric acid
  - Purified water
- **Proposition 65**
- **Chemicals known to cause cancer:**
  - 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:**
  - 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  GHS07  GHS08
- **Signal word** Danger
- **Hazard-determining components of labeling:**
  - BERYLLIUM OXYACETATE
- **Hazard statements**
  - H315 Causes skin irritation.
  - H318 Causes serious eye damage.
  - H317 May cause an allergic skin reaction.
  - H350 May cause cancer.
- **Precautionary statements**
  - P261 Avoid breathing dust/fume/gas/mist/vapors/spray
**Product name:** Beryllium Standard: 1000 µg/mL Be in 5% HNO3 [100ml bottle]

(Contd. of page 8)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P280</td>
<td>Wear protective gloves.</td>
</tr>
<tr>
<td>P305+P351+P338</td>
<td>If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</td>
</tr>
<tr>
<td>P310</td>
<td>Immediately call a poison center/doctor.</td>
</tr>
<tr>
<td>P321</td>
<td>Specific treatment (see on this label).</td>
</tr>
<tr>
<td>P405</td>
<td>Store locked up.</td>
</tr>
<tr>
<td>P501</td>
<td>Dispose of contents/container in accordance with local/regional/national/international regulations.</td>
</tr>
</tbody>
</table>

- **National regulations:**

- **Information about limitation of use:**

  Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

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

### 16 Other information

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

- **Date of preparation / last revision** 06/17/2015 / -

- **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
  - Ox. Liq. 3: Oxidising Liquids, Hazard Category 3
  - Acute Tox. 3: Acute toxicity, Hazard Category 3
  - Acute Tox. 2: Acute toxicity, Hazard Category 2
  - Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A
  - Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
  - Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  - Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
  - Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
  - Carc. 1B: Carcinogenicity, Hazard Category 1B
  - STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1
  - Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

- **Sources**