1 Identification

· Product identifier
· Trade name: Terbium AA Standard (125 mL)
· Part number: IAA-265
· 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
· Information department:
  Telephone: 800-227-9770
e-mail: pdl-msds_author@agilent.com
· Emergency telephone number: CHEMTREC®: 1-800-424-9300

2 Hazard identification

· Classification of the substance or mixture
  GHS05 Corrosion
  Serious Eye Damage - Category 1 H318 Causes serious eye damage.
  GHS07
  Skin Irritation - Category 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
  Causes skin irritation.
  Causes serious eye damage.
· Precautionary statements
  If medical advice is needed, have product container or label at hand.
  Keep out of reach of children.
  Read label before use.
  Wash thoroughly after handling.
  Wear protective gloves/protective clothing/eye protection/face protection.
  If on skin: Wash with plenty of water.
Trade name: Terbium AA Standard (125 mL)

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Specific treatment (see on this label). Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

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

3 Composition/Information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

Dangerous components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2</td>
<td>3.96% w/w</td>
</tr>
<tr>
<td>Nitric acid</td>
<td></td>
</tr>
</tbody>
</table>

4 First aid measures

- Description of first aid measures
- General information: Immediately remove any clothing soiled by the product.
- 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.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing: If symptoms persist consult doctor.
- 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 Firefighting measures

- Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
- Protective equipment: No special measures required.
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**: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Use neutralizing agent. Dispose contaminated material as waste according to item 13.
- **Reference to other sections**
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- **Handling**
  - **Precautions for safe handling** No special precautions are necessary if used correctly.
  - **Information about protection against explosions and fires**: No special measures required.
- **Conditions for safe storage, including any incompatibilities**
  - **Storage**: No special requirements.
  - **Requirements to be met by storerooms and receptacles**: No special requirements.
  - **Information about storage in one common storage facility**: Not required.
  - **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**
    - **7697-37-2 nitric acid**
      - EL Short-term value: 4 ppm
      - Long-term value: 2 ppm
      - EV Short-term value: 10 mg/m³, 4 ppm
      - Long-term value: 5 mg/m³, 2 ppm
- **Additional information**: The lists that were valid during the creation were used as basis.
- **Exposure controls**
  - **Personal protective equipment**
    - **General protective and hygienic measures**: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the skin. Avoid contact with the eyes and skin.
  - **Breathing equipment**: When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not
48.1.26

needed.

Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved
device/equipment with appropriate organic or acid gas cartridge.

· **Protection of hands:**
  Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil
  thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is
direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times
exceeding 4 hrs. Supplier recommendations should be followed.

· **Material of gloves**
  For normal use: nitrile rubber, 11-13 mil thickness
  For direct contact with the chemical: butyl rubber, 12-15 mil thickness

· **Penetration time of glove material**
  For normal use: nitrile rubber: 1 hour
  For direct contact with the chemical: butyl rubber: >4 hours

· **Eye protection:**
  Tightly sealed goggles

---

### 9 Physical and chemical properties

<table>
<thead>
<tr>
<th><strong>· Information on basic physical and chemical properties</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>· General Information</strong></td>
</tr>
<tr>
<td><strong>· Appearance:</strong></td>
</tr>
<tr>
<td>Form: Fluid</td>
</tr>
<tr>
<td>Color: Colorless</td>
</tr>
<tr>
<td>Odor: Odorless</td>
</tr>
<tr>
<td>Odor threshold: Not determined.</td>
</tr>
<tr>
<td><strong>· pH-value:</strong></td>
</tr>
<tr>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>· Change in condition</strong></td>
</tr>
<tr>
<td>Melting point/Melting range: Undetermined.</td>
</tr>
<tr>
<td>Boiling point/Boiling range: 100 °C</td>
</tr>
<tr>
<td><strong>· Flash point:</strong></td>
</tr>
<tr>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>· Flammability (solid, gaseous):</strong></td>
</tr>
<tr>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>· Decomposition temperature:</strong></td>
</tr>
<tr>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>· Auto igniting:</strong></td>
</tr>
<tr>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td><strong>· Danger of explosion:</strong></td>
</tr>
<tr>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td><strong>· Explosion limits:</strong></td>
</tr>
<tr>
<td>Lower: Not determined.</td>
</tr>
<tr>
<td>Upper: Not determined.</td>
</tr>
<tr>
<td><strong>· Vapor pressure at 20 °C:</strong></td>
</tr>
<tr>
<td>23 hPa</td>
</tr>
<tr>
<td><strong>· Density at 20 °C:</strong></td>
</tr>
<tr>
<td>1.02008 g/cm³</td>
</tr>
<tr>
<td><strong>· Relative density</strong></td>
</tr>
<tr>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>· Vapor density</strong></td>
</tr>
<tr>
<td>Not determined.</td>
</tr>
</tbody>
</table>
### 48.1.26 Other properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Solubility in / Miscibility with Water</strong></td>
<td>Not miscible or difficult to mix.</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water)</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Viscosity:</strong></td>
<td></td>
</tr>
<tr>
<td>Dynamic at 20 °C:</td>
<td>0.952 mPas</td>
</tr>
<tr>
<td>Kinematic:</td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Solvent content:</strong></td>
<td></td>
</tr>
<tr>
<td>Water:</td>
<td>95.9 %</td>
</tr>
<tr>
<td>Solids content:</td>
<td>0.1 %</td>
</tr>
<tr>
<td><strong>Other information</strong></td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

### 10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **Chemical stability**
  - **Thermal decomposition / conditions to be avoided**: No decomposition if used according to specifications.
  - **Possibility of hazardous reactions**: No dangerous reactions known.
  - **Conditions to avoid**: No further relevant information available.
  - **Incompatible materials**: No further relevant information available.
  - **Hazardous decomposition products**: No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity**:
    - **LD/LC50 values that are relevant for classification:**
      - **ATE (Acute Toxicity Estimate)**
        - Inhalative LC50/4 h: 1,692 mg/L (rat)
      - 7697-37-2 nitric acid
        - Inhalative LC50/4 h: 67 mg/L (rat)
  - **Primary irritant effect**:
    - **on the skin**: Irritant to skin and mucous membranes.
    - **on the eye**: Strong irritant with the danger of severe eye injury.
    - **Sensitization**: No sensitizing effects known.
  - **Additional toxicological information**:
    - The product shows the following dangers according to internally approved calculation methods for preparations:
      - Irritant

- **Carcinogenic categories**
  - **IARC (International Agency for Research on Cancer)**
    - None of the ingredients is listed.
12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Behavior in environmental systems:
- Bioaccumulative potential: No further relevant information available.
- Mobility in soil: No further relevant information available.
- Additional ecological information:
- General notes:
  Water hazard class 1 (Self-assessment): slightly hazardous for water
  Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
  Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

13 Disposal considerations

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

- Uncleaned packagings:
  Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
- DOT, TDG, IMDG, IATA
  UN3264

- UN proper shipping name
  DOT
  3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
  TDG
  IMDG, IATA
  CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
Transport hazard class(es)
- DOT, TDG, IMDG, IATA

Class 8 Corrosive substances
Label 8

Packing group
- Class 8 Corrosive substances
- Label 8
- DOT, TDG, IMDG, IATA III

Environmental hazards: Not applicable.

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

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

Transport/Additional information:
- DOT Quantity limitations
  - On passenger aircraft/rail: 5L
  - On cargo aircraft only: 60L

- TDG Excluded quantities (EQ)
  - Code: E1
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 1000 ml

- IMDG Limited quantities (LQ)
  - Code: E1
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 1000 ml

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

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara
  - Section 355 (extremely hazardous substances):
    - 7697-37-2 nitric acid
  - Section 313 (Specific toxic chemical listings):
    - 7697-37-2 nitric acid
### Trade name: Terbium AA Standard (125 mL)

<table>
<thead>
<tr>
<th>· TSCA (Toxic Substances Control Act):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>· All ingredients are listed.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Canadian substance listings:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>· Canadian Domestic Substances List (DSL)</td>
<td></td>
</tr>
<tr>
<td>7697-37-2 nitric acid</td>
<td></td>
</tr>
<tr>
<td>7732-18-5 water</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Canadian Ingredient Disclosure list (limit 0.1%)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the ingredients is listed.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Canadian Ingredient Disclosure list (limit 1%)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2 nitric acid</td>
<td></td>
</tr>
</tbody>
</table>

| · 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.

<table>
<thead>
<tr>
<th>· Department issuing SDS:</th>
<th>Document Control / Regulatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Contact:</td>
<td><a href="mailto:regulatory@ultrasci.com">regulatory@ultrasci.com</a></td>
</tr>
<tr>
<td>· Date of the latest revision of the safety data sheet</td>
<td>03/31/2019 / 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Abbreviations and acronyms:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IMDG: International Maritime Code for Dangerous Goods</td>
<td></td>
</tr>
<tr>
<td>DOT: US Department of Transportation</td>
<td></td>
</tr>
<tr>
<td>IATA: International Air Transport Association</td>
<td></td>
</tr>
<tr>
<td>EINECS: European Inventory of Existing Commercial Chemical Substances</td>
<td></td>
</tr>
<tr>
<td>ELINCS: European List of Notified Chemical Substances</td>
<td></td>
</tr>
<tr>
<td>CAS: Chemical Abstracts Service (division of the American Chemical Society)</td>
<td></td>
</tr>
<tr>
<td>HMIS: Hazardous Materials Identification System (USA)</td>
<td></td>
</tr>
<tr>
<td>LC50: Lethal concentration, 50 percent</td>
<td></td>
</tr>
<tr>
<td>LD50: Lethal dose, 50 percent</td>
<td></td>
</tr>
<tr>
<td>PBT: Persistent, Bioaccumulative and Toxic</td>
<td></td>
</tr>
<tr>
<td>vPvB: very Persistent and very Bioaccumulative</td>
<td></td>
</tr>
</tbody>
</table>

* Data compared to the previous version altered.