1 Identification

- Product identifier
- Trade name: Custom Standard (125 mL)
- Part number: ICUS-5635
- 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(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
  - Causes skin irritation.
  - Causes serious eye damage.

- Precautionary statements
  - Wash thoroughly after handling.
  - Wear protective gloves / eye protection / face protection.
  - If on skin: Wash with plenty of water.
  - 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).

(Contd. on page 2)
4.95% nitric acid
1.0% calcium carbonate
1.0% potassium nitrate
1.0% sodium nitrate
1.0% ammonium dihydrogenorthophosphate

* 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. Fire-fighting 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.
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.
- Protective Action Criteria for Chemicals

| PAC-1:                  |  |  |
|------------------------|  |  |
| 7697-37-2 nitric acid  | 0.16 ppm |
| 471-34-1 calcium carbonate | 45 mg/m³ |
| 7757-79-1 potassium nitrate | 9 mg/m³ |
| 13446-18-9 magnesium nitrate hexahydrate | 16 mg/m³ |
| 7631-99-4 sodium nitrate | 4.1 mg/m³ |
| 7722-76-1 ammonium dihydrogenorthophosphate | 17 mg/m³ |

| PAC-2:                  |  |  |
|------------------------|  |  |
| 7697-37-2 nitric acid  | 24 ppm  |
| 471-34-1 calcium carbonate | 210 mg/m³ |
| 7757-79-1 potassium nitrate | 100 mg/m³ |
| 13446-18-9 magnesium nitrate hexahydrate | 180 mg/m³ |
| 7631-99-4 sodium nitrate | 45 mg/m³ |
| 7722-76-1 ammonium dihydrogenorthophosphate | 190 mg/m³ |

| PAC-3:                  |  |  |
|------------------------|  |  |
| 7697-37-2 nitric acid  | 92 ppm  |
| 471-34-1 calcium carbonate | 1,300 mg/m³ |
| 7757-79-1 potassium nitrate | 600 mg/m³ |
| 13446-18-9 magnesium nitrate hexahydrate | 1,100 mg/m³ |
| 7631-99-4 sodium nitrate | 270 mg/m³ |
| 7722-76-1 ammonium dihydrogenorthophosphate | 1,100 mg/m³ |

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.
8 Exposure controls/personal protection

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

· Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2 nitric acid</td>
<td>Long-term value: 5 mg/m³, 2 ppm</td>
<td>Short-term value: 10 mg/m³, 4 ppm</td>
<td>Short-term value: 10 mg/m³, 4 ppm</td>
</tr>
<tr>
<td></td>
<td>Long-term value: 5 mg/m³, 2 ppm</td>
<td>Long-term value: 5.2 mg/m³, 2 ppm</td>
<td>Long-term value: 5.2 mg/m³, 2 ppm</td>
</tr>
<tr>
<td>471-34-1 calcium carbonate</td>
<td>Long-term value: 15* 5** mg/m³</td>
<td>Long-term value: 10* 5** mg/m³</td>
<td>TLV withdrawn</td>
</tr>
<tr>
<td></td>
<td>*total dust **respirable fraction</td>
<td>*total dust **respirable fraction</td>
<td></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:
  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 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

(Contd. on page 5)
**9 Physical and chemical properties**

- **Information on basic physical and chemical properties**
  - **General Information**
  - **Appearance:**
    - **Form:** Fluid
    - **Color:** According to product specification
  - **Odor:** Characteristic
  - **Odor threshold:** Not determined.
  - **pH-value:** Not determined.

- **Change in condition**
  - **Melting point/Melting range:** Undetermined.
  - **Boiling point/Boiling range:** 100 °C (212 °F)

- **Flash point:** Not applicable.

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

- **Decomposition temperature:** Not determined.

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

- **Danger of explosion:** Product does not present an explosion hazard.

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

- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17.3 mm Hg)

- **Density at 20 °C (68 °F):** 1.07143 g/cm³ (8.94108 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.
Solvent content:
- Water: 90.1 %
- VOC content: 0.00 %
  - 0.0 g/l / 0.00 lb/gal
- Solids content: 5.0 %
- Other information: No further relevant information available.

**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)**
    - Oral: LD50 94,703 mg/kg (rat)
    - Inhalative: LC50/4 h 1,354 mg/L (rat)

    **7697-37-2 nitric acid**
    - Inhalative: LC50/4 h 67 mg/L (rat)

    **471-34-1 calcium carbonate**
    - Oral: LD50 6,450 mg/kg (rat)

    **7757-79-1 potassium nitrate**
    - Oral: LD50 3,750 mg/kg (rat)

    **7631-99-4 sodium nitrate**
    - Oral: LD50 1,267 mg/kg (rat)

    **7722-76-1 ammonium dihydrogenorthophosphate**
    - Oral: LD50 5,750 mg/kg (rat)
    - Dermal: LD50 >7,940 mg/kg (rabbit)

- **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
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, IMDG, IATA: UN3264
- **UN proper shipping name**
  - DOT: Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)
  - IMDG, IATA: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
Trade name: Custom Standard (125 mL)

<table>
<thead>
<tr>
<th>15 Regulatory information</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Safety, health and environmental regulations/legislation specific for the substance or mixture</td>
</tr>
<tr>
<td>· Sara</td>
</tr>
<tr>
<td>· Section 355 (extremely hazardous substances):</td>
</tr>
<tr>
<td>7697-37-2 nitric acid</td>
</tr>
<tr>
<td>· Section 313 (Specific toxic chemical listings):</td>
</tr>
<tr>
<td>7697-37-2 nitric acid</td>
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<tr>
<td>13446-18-9 magnesium nitrate hexahydrate</td>
</tr>
</tbody>
</table>
Safety Data Sheet
acc. to OSHA HCS

Printing date 04/11/2019
Reviewed on 04/11/2019

Trade name: Custom Standard (125 mL)

- TSCA (Toxic Substances Control Act):
  - 7697-37-2 nitric acid
  - 471-34-1 calcium carbonate
  - 7757-79-1 potassium nitrate
  - 7631-99-4 sodium nitrate
  - 7722-76-1 ammonium dihydrogenorthophosphate
  - 7732-18-5 water

- 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.

- 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 04/11/2019 / 2
- 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)
  - 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
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1

* Data compared to the previous version altered.