Hazardous according to criteria of Australian Safety and Compensation Council

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

- **1.1 Product identifier**
  - **Product name:** Iron Standard: 10000 µg/mL Fe in 5% HNO3 [100ml bottle]
  - **Part number:** 5190-8402

- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
  - No further relevant information available.

- **Application of the substance / the mixture**
  - Reference material for laboratory use only

- **Manufacturer/Supplier:**
  - Agilent Technologies Australia Pty Ltd
  - 679 Springvale Road
  - Mulgrave
  - Victoria 3170, Australia

- **Further information obtainable from:**
  - e-mail: pdl-msds_author@agilent.com

- **1.4 Emergency telephone number:**
  - CHEMTREC®: +(61) - 290372994

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**

  - **Classification according to Regulation (EC) No 1272/2008**
    - flame over circle

  - Ox. Liq. 3  H272  May intensify fire; oxidiser.

  - corrosion

  - Skin Corr. 1B  H314  Causes severe skin burns and eye damage.

  - Eye Dam. 1  H318  Causes serious eye damage.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

  - C; Corrosive

  - R34:  Causes burns.

  - Xi; Irritant

  - R41:  Risk of serious damage to eyes.

  - O; Oxidising

  - R8:  Contact with combustible material may cause fire.

- **Information concerning particular hazards for human and environment:**

  - The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

- **Classification system:**

  - The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- **2.2 Label elements**

  - **Labelling according to Regulation (EC) No 1272/2008**

  - The product is classified and labelled according to the CLP regulation.

(Contd. on page 2)
Product name: Iron Standard: 10000 µg/mL Fe in 5% HNO3 [100ml bottle]

- **Hazard pictograms**
  - GHS03
  - GHS05

- **Signal word** Danger

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

- **Hazard statements**
  - H272 May intensify fire; oxidiser.
  - H314 Causes severe skin burns and eye damage.

- **Precautionary statements**
  - P221 Take any precaution to avoid mixing with combustibles.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - 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.
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Information concerning particular hazards for human and environment:**

- **Safety phrases:**
  - 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  - 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
  - 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
  - 60 This material and its container must be disposed of as hazardous waste.

- **2.3 Other hazards**

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

### SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**

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

- **Dangerous components:**

<table>
<thead>
<tr>
<th>CAS: 7697-37-2</th>
<th>Nitric acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 231-714-2</td>
<td>C R35; O R8; Ox. Liq. 3, H272; Skin Corr. 1A, H314</td>
</tr>
<tr>
<td>RTECS: QU5775000</td>
<td></td>
</tr>
</tbody>
</table>

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **General information:** Immediately remove any clothing soiled by the product.

- **After inhalation:** In case of unconsciousness place patient in recovery position for transport.
**Product name:** Iron Standard: 10000 µg/mL Fe in 5% HNO₃ [100ml bottle]

- **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:**
  - Rinse mouth. Do not induce vomiting.
  - Drink plenty of water and provide fresh air. Call for a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.

**SECTION 5: Firefighting measures**

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

**SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures**
  - Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
  - Dilute with plenty of water.
  - Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
  - Use neutralising agent.
  - Dispose of contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
  - Absorb liquid components with liquid-binding material.
  - **DO NOT USE SAWDUST.**
- **6.4 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.

**SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling**
  - Ensure good ventilation/extraction at the workplace.
  - Store in cool, dry place in tightly closed receptacles.
  - Prevent formation of aerosols.
- **Information about fire - and explosion protection:** Protect from heat.
- **7.2 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 manufacturer's 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.
Product name: Iron Standard: 10000 µg/mL Fe in 5% HNO3 [100ml bottle]

- **Further information about storage conditions:**
  - Keep container tightly sealed.
  - Protect from heat and direct sunlight.
- **7.3 Specific end use(s)** No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
  - **Ingredients with limit values that require monitoring at the workplace:**
    - 7697-37-2 Nitric acid
      - NES Short-term value: 10 mg/m³, 4 ppm
      - Long-term value: 5.2 mg/m³, 2 ppm
  - **Additional information:** Lists used were valid at the time of SDS preparation.
- **8.2 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.
      - Avoid contact with the eyes and skin.
    - **Respiratory protection:**
      - In case of brief exposure or low pollution use respiratory filter device.
      - In case of intensive or longer exposure use self-contained respiratory protective device.
    - **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

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

9.1 Information on basic physical and chemical properties

- General Information
  - Appearance:
    - Form: Liquid
    - Colour: Colourless
  - Odour: Odourless
  - Odour threshold: Not determined.
  - pH-value at 20 °C: < 2

- Change in condition
  - Melting point/Melting range: Not determined.
  - Boiling point/Boiling range: 100 °C

- Flash point:
  - Not applicable.

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

- Ignition temperature:
  - Decomposition temperature: Not determined.
  - Self-igniting: Product is not selfigniting.
  - Danger of explosion:
    - Product does not present an explosion hazard.

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

- Vapour pressure at 20 °C: 23 hPa

- Density at 20 °C: 1.02263 g/cm³
- Relative density: Not determined.
- Vapour density: Not determined.
- Evaporation rate: Not determined.

- Solubility in / Miscibility with water: Fully miscible.

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

9.2 Other information

- Viscosity:
  - Dynamic: Not determined.
  - Kinematic: Not determined.

SECTION 10: Stability and reactivity

- 10.1 Reactivity Stable under normal conditions.
- 10.2 Chemical stability Stable under normal conditions.
- 10.3 Possibility of hazardous reactions No dangerous reactions known.
- 10.4 Conditions to avoid Heat.
- 10.5 Incompatible materials: Strong oxidizing agents.
Product name: Iron Standard: 10000 µg/mL Fe in 5% HNO3 [100ml bottle]

- 10.6 Hazardous decomposition products:
  Formation of toxic gases is possible during heating or in case of fire.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
  - Acute toxicity:
    - LD/LC50 values relevant for classification:
    | 7697-37-2 Nitric acid |
    | Oral LD0            | 430 mg/kg (Human) |
    | Inhalative LC50/4 h | 130 mg/l (rat)    |
  - Primary irritant effect:
    - on the skin: Caustic effect on skin and mucous membranes.
    - on the eye: Strong caustic effect.
    - Sensitisation: No sensitising effects known.
  - Additional toxicological information:
    The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
    - Corrosive
    - Irritant
    - Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

SECTION 12: Ecological information

- 12.1 Toxicity
  - Aquatic toxicity:
    | 7697-37-2 Nitric acid |
    | LC50/48              | 180 mg/l (crustacean) |
  - 12.2 Persistence and degradability No further relevant information available.
  - 12.3 Bioaccumulative potential No further relevant information available.
  - 12.4 Mobility in soil No further relevant information available.
  - Additional ecological information:
    - General notes:
      Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
      Do not allow undiluted product to reach ground water, water course or sewage system.
      Must not reach sewage water or drainage ditch undiluted or unneutralised.
    - 12.5 Results of PBT and vPvB assessment
      - PBT: Not applicable.
      - vPvB: Not applicable.
  - 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods
  Recommendation
  Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Product name: Iron Standard: 10000 µg/mL Fe in 5% HNO3 [100ml bottle]

- European waste catalogue
  Waste disposal key numbers from EWC have to be assigned depending on origin and processing.

- Uncleaned packaging:
  - Recommendation: Dispose of in accordance with national regulations.
  - Recommended cleansing agents: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- 14.1 UN-Number
  - ADG, IMDG, IATA UN2031
  - ADG 2031 NITRIC ACID solution
  - IMDG, IATA NITRIC ACID solution

- 14.3 Transport hazard class(es)
  - ADG, IMDG, IATA

- Class 8 Corrosive substances.
- Label 8

- 14.4 Packing group
  - ADG, IMDG, IATA II

- 14.5 Environmental hazards:
  - Marine pollutant: No

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

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

- Transport/Additional information:
  - ADG
    - Limited quantities (LQ): 1L
    - Transport category: 2
    - Tunnel restriction code: E
  - UN "Model Regulation": UN2031, NITRIC ACID solution, 8, II

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Philippines Inventory of Chemicals and Chemical Substances
    All ingredients are listed.
  - Australian Inventory of Chemical Substances
    All ingredients are listed.
  - Standard for the Uniform Scheduling of Medicines and Poisons
    7697-37-2 Nitric acid S5, S6

(Contd. from page 6)
Product name: Iron Standard: 10000 µg/mL Fe in 5% HNO3 [100ml bottle]

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

SECTION 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.

- **Relevant phrases**
  - H272 May intensify fire; oxidiser.
  - H314 Causes severe skin burns and eye damage.
  - R35 Causes severe burns.
  - R8 Contact with combustible material may cause fire.

- **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
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - 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)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - Ox. Liq. 3: Oxidising Liquids, Hazard Category 3
  - Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A
  - Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
  - Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

- **Sources**