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

- **1.1 Product identifier**
  - **Product name:** Tungsten Standard: 1000 µg/mL W in 5% HNO3, tr. HF [100ml bottle]
  - **Part number:** 5190-8547

- **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 Manufacturing GmbH & Co. KG
  - Hewlett-Packard-Str. 8
  - 76337 Waldbronn
  - Germany

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

- **1.4 Emergency telephone number:**
  - CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
  - **Classification according to Regulation (EC) No 1272/2008**
    - 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.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
  - Not applicable.
  - Xn: Harmful
  - R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.
  - Xi: Irritant
  - R36/38: Irritating to eyes and skin.

- **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.
Product name: Tungsten Standard: 1000 µg/mL W in 5% HNO3, tr. HF [100ml bottle]

- **Hazard pictograms**
  - GHS05
  - GHS07

- **Signal word** Danger

- **Hazard-determining components of labelling:**
  - 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**
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
  - 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.
  - P322 Specific measures (see on this label).
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **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</th>
<th>Description</th>
<th>Content</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2</td>
<td>Nitric acid</td>
<td>&lt; 5%</td>
<td></td>
</tr>
<tr>
<td>EINECS: 281-71-4-2</td>
<td>C R35; O R8</td>
<td>Ox. Liq. 3, H272; Skin Corr. IA, H314</td>
<td></td>
</tr>
<tr>
<td>RTECS: QUS7575000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7664-39-3</td>
<td>Hydrofluoric acid -</td>
<td>&lt; 1.0%</td>
<td></td>
</tr>
<tr>
<td>EINECS: 281-63-4-8</td>
<td>T+ R26/27/28; C R35</td>
<td>Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; Skin Corr. 1A, H314</td>
<td></td>
</tr>
<tr>
<td>RTECS: MW 78153000</td>
<td></td>
<td></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:**
  - Symptoms of poisoning may occur even after several hours; therefore medical observation for at least 48 hours after the accident is recommended.

- **After inhalation:**
  - Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
**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:
    - Mouth respiratory protective device.
    - Wear self-contained respiratory protective device.

**SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures**

  Wear protective clothing.

- **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:**

  - 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.

- **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.
Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 29.05.2015
Revision: 29.05.2015
Version number 3

Product name: Tungsten Standard: 1000 µg/mL W in 5% HNO3, tr. HF [100ml bottle]

(Contd. from page 3)

- 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 container tightly sealed.
- 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:
    - WEL 7697-37-2 Nitric acid
      - Short-term value: 2.6 mg/m³, 1 ppm
    - WEL 7664-39-3 Hydrofluoric acid -
      - Short-term value: 2.5 mg/m³, 3 ppm
      - Long-term value: 1.5 mg/m³, 1.8 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 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
      - Protective gloves
        - Material of gloves
          - Neoprene gloves
          - PVC 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:** Liquid
    - **Form:** Liquid
    - **Colour:** Clear
    - **Odour:** Odourless
    - **Odour threshold:** Not determined.
    - **pH-value at 20 °C:** < 1.5
    - **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:** Not determined.
    - **Decomposition temperature:** Not determined.
    - **Self-igniting:** Product is not self-igniting.
    - **Danger of explosion:** Not determined.
    - **Explosion limits:**
      - **Lower:** Not determined.
      - **Upper:** Not determined.
    - **Vapour pressure at 20 °C:** 23 hPa
    - **Density at 20 °C:** 1.01949 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.
    - **Viscosity:**
      - **Dynamic:** Not determined.
      - **Kinematic:** Not determined.
    - **9.2 Other information**
      - No further relevant information available.

### 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**
  - Bases.
  - Strong oxidizing agents.
**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)
    - **7664-39-3 Hydrofluoric acid**
      - Oral LD50 1276 mg/kg (rat)
  - **Primary irritant effect:**
    - on the skin: Irritant to skin and mucous membranes.
    - on the eye: Irritating 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:
    Harmful
    Irritant

**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.
  - **12.5 Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.
  - **12.6 Other adverse effects** No further relevant information available.
Product name: Tungsten Standard: 1000 µg/mL W in 5% HNO3, tr. HF [100ml bottle]

(Contd. from page 6)

- 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
  - ADR, IMDG, IATA: UN3264
- 14.3 Transport hazard class(es)
  - ADR, IMDG, IATA: Class 8 Corrosive substances.
  - Label: 8
- 14.4 Packing group
  - ADR, IMDG, IATA: II
- 14.5 Environmental hazards:
  - Marine pollutant: No
  - Special precautions for user
    - Danger code (Kemler): Warning: Corrosive substances. 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
  - ADR
    - Excepted quantities (EQ): E1
    - Limited quantities (LQ): 1L
    - Transport category: 2
    - Tunnel restriction code: E
  - UN "Model Regulation": UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROFLUORIC ACID), 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
    - 7697-37-2 Nitric acid
    - 7664-39-3 Hydrofluoric acid - Purified water

(Contd. on page 8)
Product name: Tungsten Standard: 1000 µg/mL W in 5% HNO3, tr. HF [100ml bottle]

- 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
  7664-39-3 Hydrofluoric acid - S5, S6, S7

- 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.
  H300 Fatal if swallowed.
  H310 Fatal in contact with skin.
  H314 Causes severe skin burns and eye damage.
  H330 Fatal if inhaled.

- 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
  Acute Tox. 2: Acute toxicity, Hazard Category 2
  Acute Tox. 4: Acute toxicity, Hazard Category 4
  Acute Tox. 1: Acute toxicity, Hazard Category 1
  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

Sources