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

- **1.1 Product identifier**
  - **Product name:** Manganese AA Standard: 1000 µg/mL Mn in 5% HNO3 [100ml bottle]
  - **Product number:** 5190-8293

- **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
  - Tel: 1800 802 402
  - 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**
    - ![Corrosion](image)
    - Eye Dam. 1 H318. Causes serious eye damage.
    - Skin Irrit. 2 H315. Causes skin irritation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
  - Xi; Irritant
  - R38-41: Irritating to skin. Risk of serious damage to eyes.

- **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.
  - **Hazard pictograms**
    - GHS05

- **Signal word Danger**
**Product name:** Manganese AA Standard: 1000 µg/mL Mn in 5% HNO3 [100ml bottle]

(Contd. from page 1)

- **Hazard statements**
  - H315 Causes skin irritation.
  - H318 Causes serious eye damage.

- **Precautionary statements**
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - 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.
  - P321 Specific treatment (see on this label).
  - P362 Take off contaminated clothing and wash before reuse.
  - P332+P313 If skin irritation occurs: Get medical advice/attention.

- **Information concerning particular hazards for human and environment:**
  - **Safety phrases:**
    - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
    - Wear suitable protective clothing, gloves and eyeface protection.
    - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
    - 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:**
  - CAS: 7697-37-2
  - EINECS: 231-714-2
  - RTECS: QU5775000
  - Nitric acid
  - Ox. Liqu. 3, H272; Skin Corr. 1A, H314
  - C R35; O R8
  - < 5%

- **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**
  - **After inhalation:** In case of unconsciousness place patient in recovery position for transport.
  - **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.

- **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.

(Contd. on page 3)
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 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:**
  - 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**

- **7.3 Specific end use(s)**
  - No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **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
Product name: Manganese AA Standard: 1000 µg/mL Mn in 5% HNO3 [100ml bottle]

- **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 skin.
    - 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

**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.
Product name: Manganese AA Standard: 1000 µg/mL Mn in 5% HNO3 [100ml bottle]

- **Self-igniting:** Product is not selfigniting.
- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures is possible.
- **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.
- **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.
- **Thermal decomposition / conditions to be avoided:**
  Formation of toxic gases is possible during heating or in case of fire.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** Heat.
- **10.5 Incompatible materials:** Strong oxidizing agents.
- **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: Irritant to skin and mucous membranes.
  - on the eye: Strong irritant with the danger of severe eye injury.
- **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:
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.

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.
  - 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
**Product name:** Manganese AA Standard: 1000 µg/mL Mn in 5% HNO3 [100ml bottle]

- **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-Q
  - **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)**
- **Transport category**
- **Tunnel restriction code**
- **UN "Model Regulation":**

**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

- **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 Irrit. 2: Skin corrosion/irritation, Hazard Category 2

(Contd. on page 8)
### Product name: Manganese AA Standard: 1000 µg/mL Mn in 5% HNO3 [100ml bottle]

- **Eye Dam. 1**: Serious eye damage/eye irritation, Hazard Category 1

**Sources**