1 Identification

· Product identifier
· Trade name: Gallium Standard
· Part number: ICP-131, ICP-131-25
· Relevant identified uses of the substance or mixture and uses advised against
Reagents and Standards for Analytical Chemical Laboratory Use
· Details of the supplier of the safety data sheet
· Manufacturer/Supplier:
  Agilent Technologies Australia Pty Ltd
  679 Springvale Road
  Mulgrave
  Victoria 3170, Australia
· Further information obtainable from:
  Telephone: 1800 802 402
  e-mail: pdl-msds_author@agilent.com
· Emergency telephone number: CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

· Classification of the substance or mixture
  Eye Dam. 1 H318 Causes serious eye damage.

· Label elements
· GHS label elements The product is classified and labelled according to the Globally Harmonised System (GHS).
· Hazard pictograms
  GHS05

· Signal word Danger

· Hazard-determining components of labelling:
  nitric acid
  gallium
· 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.

(Contd. on page 2)
Trade name: Gallium Standard

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).
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.

Other hazards

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

3 Composition and Information on Ingredients

- Chemical characterisation: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.
- Dangerous components:
  - 7697-37-2 nitric acid Ox. Liq. 2, H272; Skin Corr. 1, H314 3.96%
  - 7440-55-3 gallium Skin Corr. 1, H314 1%
- Additional information: For the wording of the listed hazard phrases refer to section 16.

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 extinguishing methods suitable to surrounding conditions.
- 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 neutralising 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 fire and explosion protection: No special measures required.

Conditions for safe storage, including any incompatibilities
- Storage:
- 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 container tightly sealed.

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

8 Exposure controls and personal protection

- Additional information about design of technical facilities: No further data; see item 7.

- Control parameters

<table>
<thead>
<tr>
<th>Ingredients with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2 nitric acid</td>
</tr>
<tr>
<td>NES</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>WES</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

- Additional information: The lists valid during the making 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.
- Respiratory protection:
  - 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.
Trade name: Gallium Standard

- **Protection of hands:**
  Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil 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>Information on basic physical and chemical properties</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>Colour: Colourless</td>
</tr>
<tr>
<td>Odour: Odourless</td>
</tr>
<tr>
<td>Odour threshold: Not determined.</td>
</tr>
<tr>
<td><strong>pH-value:</strong> Not determined.</td>
</tr>
<tr>
<td><strong>Change in condition</strong></td>
</tr>
<tr>
<td>Melting point/freezing point: Undetermined.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range: 100 °C</td>
</tr>
<tr>
<td><strong>Flash point:</strong> Not applicable.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas):</strong> Not applicable.</td>
</tr>
<tr>
<td><strong>Decomposition temperature:</strong> Not determined.</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature:</strong> Product is not selfigniting.</td>
</tr>
<tr>
<td><strong>Explosive properties:</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>Vapour pressure at 20 °C:</strong> 23 hPa</td>
</tr>
<tr>
<td><strong>Density at 20 °C:</strong> 1.06177 g/cm³</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
</tr>
<tr>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
</tr>
<tr>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
</tr>
<tr>
<td>Not determined.</td>
</tr>
</tbody>
</table>
Trade name: Gallium Standard

- Solubility in / Miscibility with water: Not miscible or difficult to mix.
- Partition coefficient: n-octanol/water: Not determined.
- Viscosity:
  - Dynamic at 20 °C: 0.952 mPas
  - Kinematic: Not determined.
- Solvent content:
  - Water: 95.0 %
  - VOC (EC) 0.00 %
  - Solids content: 1.0 %
- 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 relevant for classification:
  - ATE (Acute Toxicity Estimates)
    - 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:
  - Skin corrosion/irritation Irritant to skin and mucous membranes.
  - Serious eye damage/irritation Strong irritant with the danger of severe eye injury.
  - Respiratory or skin 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:
  Irritant

12 Ecological Information
- Toxicity
  - Aquatic toxicity: No further relevant information available.
Trade name: Gallium Standard

- Persistence and degradability: No further relevant information available.
- Behaviour 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 (German Regulation) (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 sewage water or drainage ditch undiluted or unneutralised.
- 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 together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
  - ADG, IMDG, IATA: UN3264
- UN proper shipping name
  - ADG: 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
  - IMDG, IATA: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
- Transport hazard class(es)
  - ADG, IMDG, IATA
    - Class: 8 Corrosive substances.
    - Label: 8
- Packing group
  - ADG, IMDG, IATA: III
- Environmental hazards:
  - Not applicable.
- Special precautions for user
  - Warning: Corrosive substances.
  - Danger code (Kemler): 80
  - EMS Number: F-A,S-B
Trade name: Gallium Standard

- Segregation groups: Acids
- Stowage Category: A
- Stowage Code: SW2 Clear of living quarters.
- Transport in bulk according to Annex II of Marpol and the IBC Code: Not applicable.

Transport/Additional information:

- ADG
  - Limited quantities (LQ): 5L
  - Excepted quantities (EQ): Code: E1
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 1000 ml

- IMDG
  - Limited quantities (LQ): 5L
  - Excepted quantities (EQ): 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
  - 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
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I
    - 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.

- Relevant phrases
  - H272 May intensify fire; oxidiser.
  - H314 Causes severe skin burns and eye damage.

- Department issuing SDS: Document Control / Regulatory
- Contact: regulatory@ultrasci.com

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
Trade name: Gallium Standard

IATA: International Air Transport Association
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)
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
Ox. Liq. 2: Oxidizing liquids – Category 2
Skin Corr. 1: Skin corrosion/irritation – Category 1
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1