### Kit components

<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5184-3564(Kit)</td>
<td>ICP-MS Checkout Solutions for 7500s</td>
</tr>
</tbody>
</table>

Components:

<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5184-3566</td>
<td>Tuning Solution</td>
</tr>
<tr>
<td>G1820-60258</td>
<td>Wash-Nitric Acid Blank</td>
</tr>
<tr>
<td>G1820-60259</td>
<td>Wash-Water Blank</td>
</tr>
<tr>
<td>G1820-60372</td>
<td>Dual Mode 1 Solution</td>
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<tr>
<td>G1820-60410</td>
<td>Dual Mode 2 Solution</td>
</tr>
<tr>
<td>ZHP-18-100</td>
<td>Abundance Sensitivity (1)</td>
</tr>
<tr>
<td>ZHP-19-100</td>
<td>Abundance Sensitivity (2)</td>
</tr>
<tr>
<td>ZHP-20-100</td>
<td>Detection Limit (1)</td>
</tr>
<tr>
<td>ZHP-21-500</td>
<td>High Sensitivity Tune</td>
</tr>
</tbody>
</table>
SECTION 1: Identification of the substance/mixture and of the company/undertaking

- English additional compounds
- 1.1 Product identifier
- Product Name: Tuning Solution, Part Number 5184-3566
- Part Number: 5184-3566
- 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
  Reagents and Standards for Analytical Chemistry Laboratory Use
  2 x 500 mL Solution
- 1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
  Agilent Technologies Manufacturing GmbH & Co. KG
  Hewlett-Packard-Str. 8
  76337 Waldbronn
  Germany
- Further information obtainable from: product safety department
- 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

  GHS07

  Skin Irrit. 2 H315 Causes skin irritation.
  Eye Irrit. 2 H319 Causes serious eye irritation.

- 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

  GHS07

- Signal word Warning
- Hazard statements: Causes skin irritation.
  Causes serious eye irritation.
- 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.
  Wear protective gloves / eye protection / face protection.
  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  If skin irritation occurs: Get medical advice/attention.
  Take off contaminated clothing and wash it before reuse.
  If eye irritation persists: Get medical advice/attention.

- 2.3 Other hazards
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

(Contd. on page 2)
SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures
  - Description: Mixture of substances listed below with nonhazardous additions.
  - Dangerous components:

<table>
<thead>
<tr>
<th>CAS</th>
<th>Chemical Name</th>
<th>EINECS</th>
<th>Ox. Liq. 2, H272;</th>
<th>Skin Corr. 1A, H314</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2</td>
<td>nitric acid</td>
<td>231-714-2</td>
<td></td>
<td></td>
<td>2.0%</td>
</tr>
<tr>
<td>10102-45-1</td>
<td>thallium nitrate</td>
<td>223-273-1</td>
<td>☢ Acute Tox. 2, H300; ☢ Acute Tox. 2, H330; ☢ STOT RE 2, H373; ☢ Aquatic Chronic 2, H411</td>
<td>&lt;0.0001%</td>
<td></td>
</tr>
<tr>
<td>7440-45-1</td>
<td>cerium</td>
<td>231-158-0</td>
<td>☢ Ox. Liq. 2, H272; ☢ Eye Dam. 1, H318</td>
<td>&lt;0.0001%</td>
<td></td>
</tr>
<tr>
<td>7440-48-4</td>
<td>cobalt</td>
<td>215-233-5</td>
<td>☢ Resp. Sens. 1, H334; ☢ Skin Sens. 1, H317; ☢ Aquatic Chronic 4, H415</td>
<td>&lt;0.0001%</td>
<td></td>
</tr>
<tr>
<td>7440-65-5</td>
<td>yttrium</td>
<td>209-062-5</td>
<td>☢ Acute Tox. 4, H302; ☢ Eye Irrit. 2, H319</td>
<td>&lt;0.0001%</td>
<td></td>
</tr>
<tr>
<td>554-13-2</td>
<td>lithium carbonate</td>
<td>231-791-2</td>
<td></td>
<td></td>
<td>97.9995%</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>water, distilled, conductivity or of similar purity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Additional information: For the wording of the listed hazard 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 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. If symptoms persist, consult a doctor.
  - After swallowing: Do not give anything to eat or drink - Do not induce vomiting.
  - 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: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture: No further relevant information available.
- 5.3 Advice for firefighters
  - Protective equipment: No special measures required.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures: Not required.
- 6.2 Environmental precautions: No special measures required.
  - 6.3 Methods and material for containment and cleaning up:
    Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Ensure adequate ventilation.
- 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/exhaustion at the workplace.
  Prevent formation of aerosols.

- Information about fire - and explosion protection: No special measures required.

- 7.2 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.

- 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
    - WEL Short-term value: 2.6 mg/m³, 1 ppm
    - Additional information: The lists valid during the making were used as basis.

- 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:

  Protective gloves

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves
  - Nitrile Glove
    - Thickness: ≥0.11 mm
    - Breakthrough time: ≥ 480 minutes
  - Penetration time of glove material
    - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- 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 applicable.
  - pH-value: <1
  - Change in condition
    - Melting point/freezing point: 0°C (32°F)
    - Initial boiling point and boiling range: 100°C (212°F)
  - Flash point: Not applicable.
  - Flammability (solid, gas): Not applicable.
  - Decomposition temperature: Not applicable.
  - Auto-ignition temperature: Product is not self-igniting.
  - Explosive properties: Product does not present an explosion hazard.
  - Explosion limits:
    - Lower: Not applicable.
    - Upper: Not applicable.
  - Vapour pressure at 20 °C: 23 hPa
  - Density: 1.0 g/mL @ 20°C
  - Relative density: Not applicable.
  - Vapour density: Not applicable.
  - Evaporation rate: Not applicable.
  - Solubility in / Miscibility with water: Miscible
  - Partition coefficient: n-octanol/water: Not applicable.
  - Viscosity:
    - Dynamic: Not applicable.
    - Kinematic: Not applicable.
  - Solvent content:
    - Water: 98.0 %
    - VOC (EC): 0.00 %
  - Solids content: 0.0 %
  - 9.2 Other information
    - No further relevant information available.

SECTION 10: Stability and reactivity

- 10.1 Reactivity
  - No further relevant information available.
- 10.2 Chemical stability
- 10.3 Possibility of hazardous reactions
  - No dangerous reactions known.
- 10.4 Conditions to avoid
  - No further relevant information available.
- 10.5 Incompatible materials:
  - No further relevant information available.
- 10.6 Hazardous decomposition products:
  - No dangerous decomposition products known.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
- Acute toxicity
  - Based on available data, the classification criteria are not met.

(Contd. on page 5)
Product Name: Tuning Solution, Part Number 5184-3566

- Primary irritant effect:
  - Skin corrosion/irritation
  - Causes skin irritation.
- Serious eye damage/irritation
  - Causes serious eye irritation.
- Respiratory or skin sensitisation
  - Based on available data, the classification criteria are not met.
- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
  - Germ cell mutagenicity
  - Based on available data, the classification criteria are not met.
  - Carcinogenicity
  - Based on available data, the classification criteria are not met.
- Reproductive toxicity
  - Based on available data, the classification criteria are not met.
- STOT-repeated exposure
  - Based on available data, the classification criteria are not met.
- Aspiration hazard
  - Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- 12.1 Toxicity
  - Aquatic toxicity: No further relevant information available.
- 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: Generally not hazardous for water
- 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 together with household garbage. Do not allow product to reach sewage system.
  - Uncleaned packaging:
    - Recommendation:
      - Disposal must be made according to official regulations.

SECTION 14: Transport information

- 14.1 UN-Number
  - ADR, IMDG, IATA
    - UN3264
- 14.2 UN proper shipping name
  - ADR
    - 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
  - IMDG, IATA
    - CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
- 14.3 Transport hazard class(es)
  - ADR, IMDG, IATA
    - Class
      - 8 Corrosive substances.
    - Label
      - 8
- 14.4 Packing group
  - ADR, IMDG, IATA
    - III

(Contd. on page 6)
Product Name: Tuning Solution, Part Number 5184-3566

<table>
<thead>
<tr>
<th>14.5 Environmental hazards:</th>
<th>Not applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.6 Special precautions for user</td>
<td>Warning: Corrosive substances.</td>
</tr>
<tr>
<td>- Danger code (Kemler):</td>
<td>80</td>
</tr>
<tr>
<td>- EMS Number:</td>
<td>F-A,S-B</td>
</tr>
<tr>
<td>- Segregation groups</td>
<td>Acids</td>
</tr>
<tr>
<td>- Stowage Category</td>
<td>A</td>
</tr>
<tr>
<td>- Stowage Code</td>
<td>SW2 Clear of living quarters.</td>
</tr>
</tbody>
</table>

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

- Transport/Additional information:
  - ADR
  - Limited quantities (LQ) 5L
  - Exempted quantities (EQ) Code: E1
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 1000 ml
  - Transport category 3
  - Tunnel restriction code E

- IMDG
  - Limited quantities (LQ) 5L
  - Exempted 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 SOLUTION), 8, III

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
  - 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Disclaimer: 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.
  - H302 Harmful if swallowed.
  - H314 Causes severe skin burns and eye damage.
  - H317 May cause an allergic skin reaction.
  - H318 Causes serious eye damage.
  - H319 Causes serious eye irritation.
  - H330 Fatal if inhaled.
  - H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  - H373 May cause damage to organs through prolonged or repeated exposure.
  - H411 Toxic to aquatic life with long lasting effects.
  - H413 May cause long lasting harmful effects to aquatic life.

- Department issuing SDS: product safety department
- Contact: Agilent Technologies Manufacturing GmbH & Co. KG 0800 603 1000 pdl-msds_author@agilent.com

(Contd. on page 7)
Product Name: Tuning Solution, Part Number 5184-3566

- 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)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Ox. Liq. 2: Oxidizing liquids – Category 2
  - Skin Corr. 1A: Skin corrosion/irritation – Category 1A
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
SECTION 1: Identification of the substance/mixture and of the company/undertaking

- English additional compounds
- 1.1 Product identifier
  - Product Name: Wash-Nitric Acid Blank, Part Number G1820-60258
  - Part Number: G1820-60258

- 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
  - Reagents and Standards for Analytical Chemistry Laboratory Use
  - A 250 mL Solution

- 1.3 Details of the supplier of the safety data sheet
  - Manufacturer/Supplier:
    Agilent Technologies Manufacturing GmbH & Co. KG
    Hewlett-Packard-Str. 8
    76337 Waldbronn
    Germany
  - Further information obtainable from: product safety department
  - 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
  - Skin Corr. 1B  H314 Causes severe skin burns and eye damage.
  - Eye Dam. 1  H318 Causes serious eye damage.

- 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
- Hazard-determining components of labelling:
  - nitric acid
- Hazard statements
  - Causes severe skin burns and 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.
  - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - 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).
  - Store locked up.
  - 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.

(Contd. on page 2)
SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures
- Description: Mixtures of substances listed below with nonhazardous additions.

- Dangerous components:
  - CAS: 7697-37-2 nitric acid
  - EINECS: 231-714-2
  - Ox. Liq. 2, H272; Skin Corr. 1A, H314
  - %: 5.0%

- CHEMICAL IDENTIFICATION OF THE SUBSTANCE/PREPARATION
  - CAS: 7732-18-5 water, distilled, conductivity or of similar purity
  - EINECS: 231-791-2
  - %: 95.0%

- Additional information: For the wording of the listed hazard 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 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: Do not give anything to eat or drink - 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.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
  - Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

- 5.2 Special hazards arising from the substance or mixture
  - No further relevant information available.

- 5.3 Advice for firefighters
  - Protective equipment: No special measures required.

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.

- 6.3 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.
  - Ensure adequate ventilation.

- 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/exhaustation at the workplace.
  - Prevent formation of aerosols.
  - Information about fire - and explosion protection: No special measures required.

- 7.2 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.
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:
  
<table>
<thead>
<tr>
<th>7697-37-2 nitric acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL Short-term value: 2.6 mg/m³, 1 ppm</td>
</tr>
</tbody>
</table>

- Additional information: The lists valid during the making were used as basis.

- 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:
    Protective gloves

    The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
    Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
    Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

    - Material of gloves
      Nitrite Glove
      Thickness: ≥ 0.11 mm
      Breakthrough time: > 480 minutes

    - Penetration time of glove material
      The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

    - 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 applicable.
    - pH-value:
      <1

  - Change in condition
    Melting point/freezing point: 0°C (32°F)
    Initial boiling point and boiling range: 100°C (212°F)
Product Name: Wash-Nitric Acid Blank, Part Number G1820-60258

(Contd. of page 3)

- Flash point: Not applicable.
- Flammability (solid, gas): Not applicable.
- Decomposition temperature: Not applicable.
- Auto-ignition temperature: Product is not self-igniting.
- Explosive properties: Product does not present an explosion hazard.
- Explosion limits:
  - Lower: Not applicable.
  - Upper: Not applicable.
- Vapour pressure at 20 °C: 23 hPa
- Density:
  - Relative density: Not applicable.
  - Vapour density: Not applicable.
  - Evaporation rate: Not applicable.
- Solubility in / Miscibility with water: Miscible
- Partition coefficient: n-octanol/water: Not applicable.
- Viscosity:
  - Dynamic: Not applicable.
  - Kinematic: Not applicable.
- Solvent content:
  - Water: 95.0 %
  - VOC (EC): 0.00 %
- Solids content: 0.0 %
- 9.2 Other information: No further relevant information available.

SECTION 10: Stability and reactivity

- 10.1 Reactivity: No further relevant information available.
- 10.2 Chemical stability.
- 10.3 Possibility of hazardous reactions: No dangerous reactions known.
- 10.4 Conditions to avoid: No further relevant information available.
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects.
- Acute toxicity: Based on available data, the classification criteria are not met.
- Primary irritant effect:
  - Skin corrosion/irritation: Causes severe skin burns and eye damage.
  - Serious eye damage/irritation: Causes serious eye damage.
- Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.
- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):
  - Germ cell mutagenicity: Based on available data, the classification criteria are not met.
  - Carcinogenicity: Based on available data, the classification criteria are not met.
  - Reproductive toxicity: Based on available data, the classification criteria are not met.
- STOT—single exposure: Based on available data, the classification criteria are not met.
- STOT—repeated exposure: Based on available data, the classification criteria are not met.
Product Name: Wash-Nitric Acid Blank, Part Number G1820-60258

- Aspiration hazard Based on available data, the classification criteria are not met.

**SECTION 12: Ecological information**

- **12.1 Toxicity**
- Aquatic toxicity: No further relevant information available.
- **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: Generally not hazardous for water
  - 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 together with household garbage. Do not allow product to reach sewage system.
  - Uncleaned packaging:
    - Recommendation: Disposal must be made according to official regulations.
    - Recommended cleansing agents: Water, if necessary together with cleansing agents.

**SECTION 14: Transport information**

- **14.1 UN-Number**
  - ADR, IMDG, IATA UN3264
- **14.2 UN proper shipping name**
  - ADR 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
  - IMDG, IATA CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
- **14.3 Transport hazard class(es)**
  - ADR, IMDG, IATA
    - Class 8 Corrosive substances.
    - Label 8
- **14.4 Packing group**
  - ADR, IMDG, IATA III
- **14.5 Environmental hazards:** Not applicable.
- **14.6 Special precautions for user**
  - Danger code (Kemler): Warning: Corrosive substances.
  - EMS Number: 80 F-A,S-B
  - Segregation groups Acids A
  - Stowage Category SW2 Clear of living quarters.
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable.

Transport/Additional information:

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

- Transport category
  - Tunnel restriction code E

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

- UN "Model Regulation": UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION), 8, III

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients is listed.
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

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

SECTION 16: Other information

Disclaimer: 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: product safety department
- Contact:
  Agilent Technologies Manufacturing GmbH & Co. KG
  0800 603 1000
  pdl-msds_author@agilent.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
  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)
  VOC: Volatile Organic Compounds (USA, EU)
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  Ox. Liq. 2: Oxidizing liquids – Category 2
  Skin Corr. 1A: Skin corrosion/irritation – Category 1A
  Skin Corr. 1B: Skin corrosion/irritation – Category 1B
  Eye Dam. 1: Serious eye damage/eye irritation – Category 1
SECTION 1: Identification of the substance/mixture and of the company/undertaking

- English additional compounds
  - 1.1 Product identifier
    - Product Name: Wash-Water Blank, Part Number G1820-60259
    - Part Number: G1820-60259
    - CAS Number: 7732-18-5
    - EC number: 231-791-2

- 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
    Reagents and Standards for Analytical Chemistry Laboratory Use
    A 250 mL Solution

- 1.3 Details of the supplier of the safety data sheet
  - Manufacturer/Supplier:
    Agilent Technologies Manufacturing GmbH & Co. KG
    Hewlett-Packard-Str. 8
    76337 Waldbronn
    Germany

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

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture
  - Classification according to Regulation (EC) No 1272/2008
    The substance is not classified, according to the CLP regulation.

- 2.2 Label elements
  - Labelling according to Regulation (EC) No 1272/2008
    Not Regulated
  - Hazard pictograms
    Not Regulated
  - Signal word
    Not Regulated
  - Hazard statements
    Not Regulated
  - 2.3 Other hazards
    - Results of PBT and vPvB assessment
      - PBT: Not applicable.
      - vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- 3.1 Chemical characterisation: Substances
  - CAS No. Description
    7732-18-5 water, distilled, conductivity or of similar purity
  - Identification number(s)
    - EC number: 231-791-2

SECTION 4: First aid measures

- 4.1 Description of first aid measures
  - General information: No special measures required.
  - After inhalation: Supply fresh air; consult doctor in case of complaints.
  - After skin contact: Generally the product does not irritate the skin.
  - After eye contact: Rinse opened eye for several minutes under running water.
  - After swallowing: Do not give anything to eat or drink - 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.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
  - Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

(Contd. on page 2)
 SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures Not required.
- 6.2 Environmental precautions: Dilute with plenty of water.
- 6.3 Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, 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
  No special measures required.
  Follow good laboratory practices.
- Information about fire - and explosion protection: No special measures required.
- 7.2 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: None.
- 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: Not required.
- Additional information: The lists valid during the making were used as basis.
- 8.2 Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures: The usual precautionary measures are to be adhered to when handling chemicals.
  - Respiratory protection: Not required.
  - Protection of hands: The glove material has to be impermeable and resistant to the product/the substance/the preparation.
  - Protection of eyes: Due to missing tests no recommendation to the glove material can be given for the product/the preparation/the chemical mixture.
  - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
  - Material of gloves
  - Nitrile Glove
  - Thickness: ≥ 0.11 mm
  - Breakthrough time: > 480 minutes
  - Penetration time of glove material
  - The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.
  - Eye protection: Goggles recommended during refilling

 SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties
- General Information
- Appearance:
  - Form: Liquid

(Contd. on page 3)
 SECTION 10: Stability and reactivity

- 10.1 Reactivity No further relevant information available.
- 10.2 Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- 10.3 Possibility of hazardous reactions No dangerous reactions known.
- 10.4 Conditions to avoid No further relevant information available.
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products: No dangerous decomposition products known.

 SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
- Acute toxicity Based on available data, the classification criteria are not met.
- Primary irritant effect:
- Skin corrosion/irritation Based on available data, the classification criteria are not met.
- Serious eye damage/irritation Based on available data, the classification criteria are not met.
- Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
- Germ cell mutagenicity Based on available data, the classification criteria are not met.
SECTION 12: Ecological information

- 12.1 Toxicity
  - Aquatic toxicity: No further relevant information available.
  - 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: Generally not hazardous for water.

- 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: Smaller quantities can be disposed of with household waste.

- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agents: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- 14.1 UN-Number
  - ADR, ADN, IMDG, IATA: Not Regulated

- 14.2 UN proper shipping name
  - ADR, ADN, IMDG, IATA: Not Regulated

- 14.3 Transport hazard class(es)
  - ADR, ADN, IMDG, IATA: Not Regulated

- 14.4 Packing group
  - ADR, IMDG, IATA: Not Regulated

- 14.5 Environmental hazards:
  - Not applicable.

- 14.6 Special precautions for user:
  - Not applicable.

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

- UN "Model Regulation":
  - Not Regulated

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I: Substance is not listed.
15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Disclaimer: 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.

- **Department issuing SDS:** product safety department
- **Contact:**
  Agilent Technologies Manufacturing GmbH & Co. KG
  0800 603 1000
  pdl-msds_author@agilent.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
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

- **English additional compounds**
  - **1.1 Product identifier**
    - **Product Name:** Dual Mode 1 Solution, Part Number G1820-60372
    - **Part Number:** G1820-60372

- **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**
  - Reagents and Standards for Analytical Chemistry Laboratory Use
  - A 100mL Solution

- **1.3 Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**
    - Agilent Technologies Manufacturing GmbH & Co. KG
    - Hewlett-Packard-Str. 8
    - 76337 Waldbronn
    - Germany
  - **Further information obtainable from:** product safety department
  - **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**
    - The product is not classified, according to the CLP regulation.

- **2.2 Label elements**
  - Labelling according to Regulation (EC) No 1272/2008
  - Not Regulated
  - **Hazard pictograms** Not Regulated
  - **Signal word** Not Regulated
  - **Hazard statements** Not Regulated

- **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:** Mixture of substances listed below with nonhazardous additions.
  - **Dangerous components:** Not Regulated

- **CHEMICAL IDENTIFICATION OF THE SUBSTANCE/PREPARATION**

<table>
<thead>
<tr>
<th>CAS</th>
<th>Name</th>
<th>Properties</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2</td>
<td>nitric acid</td>
<td>Ox. Liq. 2, H272; Skin Corr. 1A, H314</td>
<td>0.2%</td>
</tr>
<tr>
<td>7440-52-0</td>
<td>Erbium from Erbium(III) oxide</td>
<td>Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335</td>
<td>0.0001%</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>water, distilled, conductivity or of similar purity</td>
<td></td>
<td>99.8%</td>
</tr>
</tbody>
</table>

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

**SECTION 4: First aid measures**

- **4.1 Description of first aid measures**
  - **General information:** No special measures required.
  - **After inhalation:** Supply fresh air; consult doctor in case of complaints.
  - **After skin contact:** Generally the product does not irritate the skin.
  - **After eye contact:** Rinse opened eye for several minutes under running water.
  - **After swallowing:** Do not give anything to eat or drink - 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 2)
SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

5.2 Special hazards arising from the substance or mixture
No further relevant information available.

5.3 Advice for firefighters
Protective equipment: No special measures required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Not required.

6.2 Environmental precautions: No special measures required.

6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 7 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
No special measures required.
Follow good laboratory practices.

Information about fire - and explosion protection: No special measures required.

7.2 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: None.

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:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls
Personal protective equipment:
General protective and hygienic measures: The usual precautionary measures are to be adhered to when handling chemicals.

Respiratory protection: Not required.

Protection of hands:
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves
Nitrile Glove
Thickness: ≥ 0.11 mm
Breakthrough time: > 480 minutes

Penetration time of glove material
The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Goggles recommended during refilling
SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties
- General Information
  - Appearance: Liquid
  - Colour: Colourless
  - Odour: Odourless
  - Odour threshold: Not applicable.
  - pH-value: <1

- Change in condition
  - Melting point/freezing point: 0°C (32°F)
  - Initial boiling point and boiling range: 100°C (212°F)

- Flash point: Not applicable.
- Flammability (solid, gas): Not applicable.
- Decomposition temperature: Not applicable.
- Auto-ignition temperature: Product is not self-igniting.
- Explosive properties: Product does not present an explosion hazard.

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

- Vapour pressure at 20 °C: 23 hPa

- Density: 1.0 g/mL @ 20°C
- Relative density: Not applicable.
- Vapour density: Not applicable.
- Evaporation rate: Not applicable.

- Solubility in / Miscibility with water: Miscible
- Partition coefficient: n-octanol/water: Not applicable.

- Viscosity:
  - Dynamic: Not applicable.
  - Kinematic: Not applicable.

- Solvent content:
  - Water: 99.8 %
  - VOC (EC): 0.00 %

- Solids content: 0.0 %
- 9.2 Other information
  No further relevant information available.

SECTION 10: Stability and reactivity

- 10.1 Reactivity
  No further relevant information available.

- 10.2 Chemical stability
- 10.3 Possibility of hazardous reactions
  No dangerous reactions known.

- 10.4 Conditions to avoid
  No further relevant information available.

- 10.5 Incompatible materials
  No further relevant information available.

- 10.6 Hazardous decomposition products
  No dangerous decomposition products known.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
- Acute toxicity
  Based on available data, the classification criteria are not met.
47.0.8

- **Primary irritant effect:**
  - Skin corrosion/irritation: Based on available data, the classification criteria are not met.
  - Serious eye damage/irritation: Based on available data, the classification criteria are not met.
  - Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.
  - CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction): Based on available data, the classification criteria are not met.
  - Germ cell mutagenicity: Based on available data, the classification criteria are not met.
  - Carcinogenicity: Based on available data, the classification criteria are not met.
  - Reproductive toxicity: Based on available data, the classification criteria are not met.
  - STOT-single exposure: Based on available data, the classification criteria are not met.
  - STOT-repeated exposure: Based on available data, the classification criteria are not met.
  - Aspiration hazard: Based on available data, the classification criteria are not met.

**SECTION 12: Ecological information**

- **12.1 Toxicity**
  - Aquatic toxicity: No further relevant information available.

- **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: Generally not hazardous for water.

- **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: Smaller quantities can be disposed of with household waste.

- **Uncleaned packaging:**
  - Recommendation: Disposal must be made according to official regulations.

**SECTION 14: Transport information**

- **14.1 UN-Number**
  - ADR, ADN, IMDG, IATA: Not Regulated

- **14.2 UN proper shipping name**
  - ADR, ADN, IMDG, IATA: Not Regulated

- **14.3 Transport hazard class(es)**
  - ADR, ADN, IMDG, IATA: Not Regulated

- **14.4 Packing group**
  - ADR, IMDG, IATA: Not Regulated

- **14.5 Environmental hazards:**
  - Not applicable.

- **14.6 Special precautions for user**
  - Not applicable.

- **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**
  - Not applicable.

- **UN "Model Regulation":**
  - Not Regulated

(Contd. of page 5)
SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients is listed.

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

SECTION 16: Other information

Disclaimer: 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.
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H335 May cause respiratory irritation.

- Department issuing SDS: product safety department

- Contact:
  Agilent Technologies Manufacturing GmbH & Co. KG
  0800 603 1000
  pdl-msds_author@agilent.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
  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)
  VOC: Volatile Organic Compounds (USA, EU)
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative

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

- English additional compounds
  - 1.1 Product identifier
    - Product Name: Dual Mode 2 Solution, Part Number G1820-60410
    - Part Number: G1820-60410
  - 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
    Reagents and Standards for Analytical Chemistry Laboratory Use
    A 100mL Solution
  - 1.3 Details of the supplier of the safety data sheet
    - Manufacturer/Supplier:
      Agilent Technologies Manufacturing GmbH & Co. KG
      Hewlett-Packard-Str. 8
      76337 Waldbronn
      Germany
    - Further information obtainable from: product safety department
    - 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: The product is not classified, according to the CLP regulation.

- 2.2 Label elements
  - Labelling according to Regulation (EC) No 1272/2008: Not Regulated
  - Hazard pictograms: Not Regulated
  - Signal word: Not Regulated
  - Hazard statements: Not Regulated

- 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: Mixture of substances listed below with nonhazardous additions.
  - Dangerous components: Not Regulated

- CHEMICAL IDENTIFICATION OF THE SUBSTANCE/PREPARATION

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<td>nitric acid</td>
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<tr>
<td>7440-52-0</td>
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<tr>
<td>7732-18-5</td>
<td>water, distilled, conductivity or of similar purity</td>
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</tr>
</tbody>
</table>

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

SECTION 4: First aid measures

- 4.1 Description of first aid measures
  - General information: No special measures required.
  - After inhalation: Supply fresh air; consult doctor in case of complaints.
  - After skin contact: Generally the product does not irritate the skin.
  - After eye contact: Rinse opened eye for several minutes under running water.
  - After swallowing: Do not give anything to eat or drink - 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 2)
SECTION 5: Firefighting measures

- 5.1 Extinguishing media
  - Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture: No further relevant information available.
- 5.3 Advice for firefighters
  - Protective equipment: No special measures required.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures: Not required.
- 6.2 Environmental precautions: No special measures required.
- 6.3 Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, 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
  - No special measures required.
  - Follow good laboratory practices.
- 7.2 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: None.
- 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:
    - The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
  - Additional information: The lists valid during the making were used as basis.
- 8.2 Exposure controls
  - Personal protective equipment:
    - General protective and hygienic measures: The usual precautionary measures are to be adhered to when handling chemicals.
    - Respiratory protection: Not required.
    - Protection of hands:
      - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
      - Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
      - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
    - Material of gloves
      - Nitrile Glove
        - Thickness: ≥ 0.11 mm
        - Breakthrough time: ≥ 480 minutes
        - Penetration time of glove material
          - The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.
    - Eye protection: Goggles recommended during refilling.
### SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
  - **General Information**
  - **Appearance:** Liquid
  - **Colour:** Colourless
  - **Odour:** Odourless
  - **Odour threshold:** Not applicable.
  - **pH-value:** <1
  - **Change in condition**
    - **Melting point/freezing point:** 0°C (32°F)
    - **Initial boiling point and boiling range:** 100°C (212°F)
  - **Flash point:** Not applicable.
  - **Flammability (solid, gas):** Not applicable.
  - **Decomposition temperature:** Not applicable.
  - **Auto-ignition temperature:** Product is not selfigniting.
  - **Explosive properties:** Product does not present an explosion hazard.
  - **Explosion limits:**
    - **Lower:** Not applicable.
    - **Upper:** Not applicable.
  - **Vapour pressure at 20 °C:** 23 hPa
  - **Density:** 1.0 g/mL @ 20°C
  - **Relative density**
  - **Vapour density**
  - **Evaporation rate**
  - **Solubility in / Miscibility with water:** Miscible
  - **Partition coefficient: n-octanol/water:** Not applicable.
  - **Viscosity**
    - Dynamic: Not applicable.
    - Kinematic: Not applicable.
  - **Solvent content:**
    - Water: 99.8 %
    - VOC (EC): 0.00 %
  - **Solids content:** 0.0 %
  - **9.2 Other information**
    - No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1 Reactivity**
  - No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided**
  - No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
  - No dangerous reactions known.
- **10.4 Conditions to avoid**
  - No further relevant information available.
- **10.5 Incompatible materials**
  - No further relevant information available.
- **10.6 Hazardous decomposition products**
  - No dangerous decomposition products known.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
  - Based on available data, the classification criteria are not met.
**SECTION 12: Ecological information**

- **12.1 Toxicity**
- Aquatic toxicity: No further relevant information available.
- 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: Generally not hazardous for water
- 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: Smaller quantities can be disposed of with household waste.
- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.

**SECTION 14: Transport information**

- **14.1 UN-Number**
  - ADR, ADN, IMDG, IATA: Not Regulated
- **14.2 UN proper shipping name**
  - ADR, ADN, IMDG, IATA: Not Regulated
- **14.3 Transport hazard class(es)**
  - ADR, ADN, IMDG, IATA:
    - Class: Not Regulated
- **14.4 Packing group**
  - ADR, IMDG, IATA: Not Regulated
- **14.5 Environmental hazards**
  - Not applicable.
- **14.6 Special precautions for use**
  - Not applicable.
- **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**
  - Not applicable.
- **14.8 UN "Model Regulation"**
  - Not Regulated
SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

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

SECTION 16: Other information

Disclaimer: 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.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Department issuing SDS: product safety department

Contact:
Agilent Technologies Manufacturing GmbH & Co. KG
0800 603 1000
pdl-msds_author@agilent.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
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)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
SECTION 1: Identification of the substance/mixture and of the company/undertaking

- English additional compounds
- 1.1 Product identifier
- Product Name: Abundance Sensitivity (1), Part Number ZHP-18-100
- Part Number: ZHP-18-100

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
Reagents and Standards for Analytical Chemistry Laboratory Use
A 100mL Solution

1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
  Agilent Technologies Manufacturing GmbH & Co. KG
  Hewlett-Packard-Str. 8
  76337 Waldbronn
  Germany

Further information obtainable from: product safety department

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

GHS07

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.

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

GHS07

- Signal word Warning
- Hazard statements
  Causes skin irritation.
  Causes serious eye irritation.

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.
Wear protective gloves / eye protection / face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
If eye irritation persists: Get medical advice/attention.

2.3 Other hazards
Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

(Contd. on page 2)
SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures
- Description: Mixure of substances listed below with nonhazardous additions.

**Dangerous components:**

<table>
<thead>
<tr>
<th>CAS</th>
<th>EINECS</th>
<th>Description</th>
<th>Ox. Liq. 2, H272</th>
<th>Ox. Sol. 3, H272</th>
<th>Skin Corr. 1A, H314</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2</td>
<td>231-714-2</td>
<td>nitric acid</td>
<td></td>
<td></td>
<td></td>
<td>2.0%</td>
</tr>
<tr>
<td>7440-46-2</td>
<td>232-146-8</td>
<td>Cesium from Cesium nitrate</td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.0001%</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>231-791-2</td>
<td>water, distilled, conductivity or of similar purity</td>
<td></td>
<td></td>
<td></td>
<td>97.9999%</td>
</tr>
</tbody>
</table>

**CHEMICAL IDENTIFICATION OF THE SUBSTANCE/PREPARATION**

- CAS: 7440-46-2
- EINECS: 232-146-8
- Cesium from Cesium nitrate
- CAS: 7732-18-5
- EINECS: 231-791-2
- water, distilled, conductivity or of similar purity

**Additional information:** For the wording of the listed hazard 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 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. If symptoms persist, consult a doctor.
- After swallowing: Do not give anything to eat or drink - 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.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture
- No further relevant information available.
- 5.3 Advice for firefighters
- Protective equipment: No special measures required.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures
- Not required.
- 6.2 Environmental precautions: Do not allow to enter sewers/surface or ground water.
- 6.3 Methods and material for containment and cleaning up:
- Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- Ensure adequate ventilation.
- 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/exhaustion at the workplace.
- Prevent formation of aerosols.
- Information about fire - and explosion protection: No special measures required.
- 7.2 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.
7.3 Specific end use(s)  No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves
Nitrile Glove
Thickness: ≥ 0.11 mm
Breakthrough time: > 480 minutes

Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Tightly sealed goggles

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Form: Liquid
Colour: Colourless
Odour: Odourless
Odour threshold: Not applicable.

pH-value: <1

Change in condition
Melting point/freezing point: 0°C (32°F)
Initial boiling point and boiling range: 100°C (212°F)
47.0.8

- **Flash point:** Not applicable.
- **Flammability (solid, gas):** Not applicable.
- **Decomposition temperature:** Not applicable.
- **Auto-ignition temperature:** Product is not selfigniting.
- **Explosive properties:** Product does not present an explosion hazard.
- **Explosion limits:**
  - Lower: Not applicable.
  - Upper: Not applicable.
- **Vapour pressure at 20 °C:** 23 hPa
- **Density:** 
  - Relative density: Not applicable.
  - Vapour density: Not applicable.
  - Evaporation rate: Not applicable.
- **Solubility in / Miscibility with water:** Miscible
- **Partition coefficient: n-octanol/water:** Not applicable.
- **Viscosity:**
  - Dynamic: Not applicable.
  - Kinematic: Not applicable.
- **Solvent content:**
  - Water: 98.0 %
  - VOC (EC): 0.00 %
- **Solids content:** 0.0 %
- 9.2 **Other information**
  - No further relevant information available.

### SECTION 10: Stability and reactivity

- 10.1 **Reactivity**
  - No further relevant information available.
- 10.2 **Chemical stability**
- 10.3 **Thermal decomposition / conditions to be avoided:**
  - No decomposition if used according to specifications.
- 10.4 **Conditions to avoid**
- 10.5 **Incompatible materials:**
- 10.6 **Hazardous decomposition products:**
  - No dangerous decomposition products known.

### SECTION 11: Toxicological information

- 11.1 **Information on toxicological effects**
  - Acute toxicity
  - Based on available data, the classification criteria are not met.
- 11.2 **Primary irritant effect:**
  - Skin corrosion/irritation
  - Causes skin irritation.
- 11.3 **Serious eye damage/irritation**
  - Causes serious eye irritation.
- 11.4 **Respiratory or skin sensitisation**
  - Based on available data, the classification criteria are not met.
- 11.5 **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- 11.6 **Germ cell mutagenicity**
  - Based on available data, the classification criteria are not met.
- 11.7 **Carcinogenicity**
  - Based on available data, the classification criteria are not met.
- 11.8 **Reproductive toxicity**
  - Based on available data, the classification criteria are not met.
- 11.9 **STOT-single exposure**
  - Based on available data, the classification criteria are not met.
- 11.10 **STOT-repeated exposure**
  - Based on available data, the classification criteria are not met.
SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **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 or large quantities of it 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 together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packaging:**
  - **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- **14.1 UN-Number**
  - ADR, IMDG, IATA UN3264

- **14.2 UN proper shipping name**
  - **ADR**
    - IMDG, IATA
      - 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
      - CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)

- **14.3 Transport hazard class(es)**
  - ADR, IMDG, IATA

  - ![Class 8]
  - **Label** 8 Corrosive substances.

- **14.4 Packing group**
  - ADR, IMDG, IATA III

- **14.5 Environmental hazards:**
  - Not applicable.

- **14.6 Special precautions for user**
  - **Danger code (Kemler):** Warning: Corrosive substances.
  - **EMS Number:** 80
  - **Segregation groups** Acids
  - **Stowage Category** A
  - **Stowage Code** SW2 Clear of living quarters.

- **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**
  - Not applicable.
SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

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

SECTION 16: Other information

Disclaimer: 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: product safety department
- Contact:
  Agilent Technologies Manufacturing GmbH & Co. KG
  0800 603 1000
  pdl-msds_author@agilent.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
  - 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)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Or. Lq.: Oxidizing liquids – Category 2
  - Skin Corr. 1A: Skin corrosion/irritation – Category 1A
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
SECTION 1: Identification of the substance/mixture and of the company/undertaking

- English additional compounds
- 1.1 Product identifier
  - Product Name: Abundance Sensitivity (2), Part Number ZHP-19-100
  - Part Number: ZHP-19-100
- 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
  - Reagents and Standards for Analytical Chemistry Laboratory Use
  - A 100mL Solution

- 1.3 Details of the supplier of the safety data sheet
  - Manufacturer/Supplier:
    - Agilent Technologies Manufacturing GmbH & Co. KG
    - Hewlett-Packard-Str. 8
    - 76337 Waldbronn
    - Germany
  - Further information obtainable from: product safety department
  - 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 The product is not classified, according to the CLP regulation.
- 2.2 Label elements
  - Labelling according to Regulation (EC) No 1272/2008 Not Regulated
  - Hazard pictograms Not Regulated
  - Signal word Not Regulated
  - Hazard statements Not Regulated
- 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: Mixture of substances listed below with nonhazardous additions.
  - Dangerous components: Not Regulated
  - CHEMICAL IDENTIFICATION OF THE SUBSTANCE/PREPARATION
    | CAS: 7697-37-2 | nitric acid | Ox. Liq. 2, H272; Skin Corr. 1A, H314 | 0.5% |
    | EINECS: 231-714-2 | | | |
    | CAS: 7440-46-2 | Cesium from Cesium nitrate | Ox. Sol. 3, H272 | 0.002% |
    | EINECS: 232-146-8 | | | |
    | CAS: 7732-18-5 | water, distilled, conductivity or of similar purity | | 99.498% |
    | EINECS: 231-791-2 | | | |
  - Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- 4.1 Description of first aid measures
  - General information: No special measures required.
  - After inhalation: Supply fresh air; consult doctor in case of complaints.
  - After skin contact: Generally the product does not irritate the skin.
  - After eye contact: Rinse opened eye for several minutes under running water.
  - After swallowing: Do not give anything to eat or drink - Do not induce vomiting
  - 4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.

(Contd. on page 2)
SECTION 5: Firefighting measures

- 5.1 Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

- 5.2 Special hazards arising from the substance or mixture No further relevant information available.

- 5.3 Advice for firefighters
- Protective equipment: No special measures required.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures Not required.
- 6.2 Environmental precautions: Do not allow to enter sewers/surface or ground water.
- 6.3 Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, 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
  No special measures required.
  Follow good laboratory practices.

- 7.2 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: None.

- 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:
  The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- 8.2 Exposure controls
- General protective and hygienic measures: The usual precautionary measures are to be adhered to when handling chemicals.
- Respiratory protection: Not required.
- Protection of hands:
  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- Material of gloves
  Nitrile Glove
  Thickness: ≥ 0.11 mm
  Breakthrough time: > 480 minutes
- Penetration time of glove material
  The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.
47.0.8

Eye protection: Goggles recommended during refilling.

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties
- General Information
  - Form: Liquid
  - Colour: Colourless
  - Odour: Odourless
  - Odour threshold: Not applicable.
  - pH-value: <1

- Change in condition
  - Melting point/freezing point: 0°C (32°F)
  - Initial boiling point and boiling range: 100°C (212°F)

- Flash point: Not applicable.
- Flammability (solid, gas): Not applicable.
- Decomposition temperature: Not applicable.
- Auto-ignition temperature: Product is not selfigniting.
- Explosive properties: Product does not present an explosion hazard.
  - Explosion limits
    - Lower: Not applicable.
    - Upper: Not applicable.

- Vapour pressure at 20 °C: 23 hPa

- Density: 1.0 g/mL @ 20°C
  - Relative density: Not applicable.
  - Vapour density: Not applicable.
  - Evaporation rate: Not applicable.

- Solubility in / Miscibility with water: Miscible

- Partition coefficient: n-octanol/water: Not applicable.

- Viscosity
  - Dynamic: Not applicable.
  - Kinematic: Not applicable.

- Solvent content:
  - Water: 99.5 %
  - VOC (EC): 0.00 %

- Solids content: 0.0 %

- 9.2 Other information
  - No further relevant information available.

SECTION 10: Stability and reactivity

- 10.1 Reactivity
  - No further relevant information available.

- 10.2 Chemical stability

- Thermal decomposition / conditions to be avoided:
  - No decomposition if used according to specifications.

- 10.3 Possibility of hazardous reactions
  - No dangerous reactions known.

- 10.4 Conditions to avoid
  - No further relevant information available.

- 10.5 Incompatible materials:
  - No further relevant information available.

- 10.6 Hazardous decomposition products:
  - No dangerous decomposition products known.
SECTION 11: Toxicological information

· 11.1 Information on toxicological effects
  · Acute toxicity: Based on available data, the classification criteria are not met.
  · Primary irritant effect:
    · Skin corrosion/irritation: Based on available data, the classification criteria are not met.
  · Serious eye damage/irritation: Based on available data, the classification criteria are not met.
  · Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.
  · CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):
    · Germ cell mutagenicity: Based on available data, the classification criteria are not met.
    · Carcinogenicity: Based on available data, the classification criteria are not met.
    · Reproductive toxicity: Based on available data, the classification criteria are not met.
  · STOT-single exposure: Based on available data, the classification criteria are not met.
  · STOT-repeated exposure: Based on available data, the classification criteria are not met.
  · Aspiration hazard: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· 12.1 Toxicity
  · Aquatic toxicity: No further relevant information available.
  · 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 or large quantities of it to reach groundwater, watercourse 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: Smaller quantities can be disposed of with household waste.
  · Uncleaned packaging:
    · Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

· 14.1 UN-Number
  · ADR, ADN, IMDG, IATA: Not Regulated
· 14.2 UN proper shipping name
  · ADR, ADN, IMDG, IATA: Not Regulated
· 14.3 Transport hazard class(es)
  · ADR, ADN, IMDG, IATA: Not Regulated
· 14.4 Packing group
  · ADR, IMDG, IATA: Not Regulated
· 14.5 Environmental hazards:
  · Not applicable.
· 14.6 Special precautions for user
  · Not applicable.
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
  · Not applicable.
SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Disclaimer: 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: product safety department

- Contact:
  Agilent Technologies Manufacturing GmbH & Co. KG
  0800 603 1000
  pdl-msds_author@agilent.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
  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)
  VOC: Volatile Organic Compounds (USA, EU)
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
SECTION 1: Identification of the substance/mixture and of the company/undertaking

- English additional compounds
- 1.1 Product identifier
- Product Name: Detection Limit (1), Part Number ZHP-20-100
- Part Number: ZHP-20-100
- 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
Reagents and Standards for Analytical Chemistry Laboratory Use
A 100mL Solution
- 1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
- Further information obtainable from: product safety department
- 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

  GHS07

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.

- 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

  GHS07

- Signal word Warning
- Hazard statements
Causes skin irritation.
Causes serious eye irritation.
- Precautionary statements
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Wear protective gloves / eye protection / face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
If eye irritation persists: Get medical advice/attention.

- 2.3 Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

(Contd. on page 2)
SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

  - **Dangerous components:**
    - CAS: 7697-37-2  
      EINECS: 231-714-2  
      nitric acid  
      Ox. Liq. 2, H272; Skin Corr. 1A, H314  
      2.0%

- **CHEMICAL IDENTIFICATION OF THE SUBSTANCE/PREPARATION**
  - CAS: 7440-69-9  
    EINECS: 231-177-4  
    bismuth  
    <0.0001%
  - CAS: 7440-84-0  
    EINECS: 231-180-0  
    indium  
    <0.0001%
  - CAS: 7440-41-7  
    EINECS: 231-791-2  
    Beryllium from Beryllium Acetate  
    Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 1, H330  
    <0.0001%
  - CAS: 7732-18-5  
    EINECS: 231-791-2  
    water, distilled, conductivity or of similar purity  
    97.9997%

- **Additional information:** For the wording of the listed hazard 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 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. If symptoms persist, consult a doctor.
  - **After swallowing:** Do not give anything to eat or drink - 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.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:** No special measures required.
- **6.3 Methods and material for containment and cleaning up:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Ensure adequate ventilation.
- **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/exhaustion at the workplace.
  - Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
47.0.8

7.2 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.

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
    - WEL Short-term value: 2.6 mg/m³, 1 ppm

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:
    - Protective gloves
      - The glove material has to be impermeable and resistant to the product/the substance/the preparation.
      - Due to missing tests no recommendation to the glove material can be given for the product/the preparation/the chemical mixture.
      - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
    - Material of gloves
      - Nitrile Glove
      - Thickness: ≥0.11 mm
      - Breakthrough time: > 480 minutes
    - Penetration time of glove material
      - The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.
  - Eye protection:
    - Tightly sealed goggles

SECTION 9: Physical and chemical properties
- 9.1 Information on basic physical and chemical properties
  - General Information
    - Form: Liquid
    - Colour: Colourless
    - Odour: Odourless
    - Odour threshold: Not applicable.
Product Name: Detection Limit (1), Part Number ZHP-20-100

(Contd. of page 3)

- **pH-value:** <1

- Change in condition
  - Melting point/freezing point: 0°C (32°F)
  - Initial boiling point and boiling range: 100°C (212°F)

- Flash point: Not applicable.

- Flammability (solid, gas): Not applicable.

- Decomposition temperature: Not applicable.

- Auto-ignition temperature: Product is not self-igniting.

- Explosive properties: Product does not present an explosion hazard.

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

- Vapour pressure at 20 °C: 23 hPa

- Density: 1.0 g/mL @ 20°C

- Relative density: Not applicable.

- Vapour density: Not applicable.

- Evaporation rate: Not applicable.

- Solubility in Miscibility with water: Miscible

- Partition coefficient: n-octanol/water: Not applicable.

- Viscosity:
  - Dynamic: Not applicable.
  - Kinematic: Not applicable.

- Solvent content:
  - Water: 98.0 %
  - VOC (EC): 0.00 %

- Solids content: 0.0 %

- 9.2 Other information: No further relevant information available.

**SECTION 10: Stability and reactivity**

- 10.1 Reactivity: No further relevant information available.

- 10.2 Chemical stability

- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

- 10.3 Possibility of hazardous reactions: No dangerous reactions known.

- 10.4 Conditions to avoid: No further relevant information available.

- 10.5 Incompatible materials: No further relevant information available.

- 10.6 Hazardous decomposition products: No dangerous decomposition products known.

**SECTION 11: Toxicological information**

- 11.1 Information on toxicological effects

- Acute toxicity: Based on available data, the classification criteria are not met.

- Primary irritant effect:
  - Skin corrosion/irritation: Causes skin irritation.

- Serious eye damage/irritation: Causes serious eye irritation.

- Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

- Germ cell mutagenicity: Based on available data, the classification criteria are not met.

- Carcinogenicity: Based on available data, the classification criteria are not met.

(Contd. on page 5)
Product Name: Detection Limit (1), Part Number ZHP-20-100

- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

### SECTION 12: Ecological information

- **12.1 Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
- **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:** Generally not hazardous for water
- **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 together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
  - **Recommendation:** Disposal must be made according to official regulations.

### SECTION 14: Transport information

- **14.1 UN-Number**
  - **ADR, IMDG, IATA** UN3264
- **14.2 UN proper shipping name**
  - **ADR** 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
  - **IMDG, IATA** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
- **14.3 Transport hazard class(es)**
  - **ADR, IMDG, IATA**
    - **Class**
      - **Label** 8 Corrosive substances.
    - **Label** 8
- **14.4 Packing group**
  - **ADR, IMDG, IATA** III
- **14.5 Environmental hazards:**
  - **Not applicable.**
- **14.6 Special precautions for user**
  - **Warning:** Corrosive substances.
  - **Danger code (Kemler):**
    - **EMS Number:** F-A,S-B
    - **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.

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

- Transport category
  - E
- Tunnel restriction code

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

- UN "Model Regulation":
  UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION), 8, III

SECTION 15: Regulatory information

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients is listed.
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

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

SECTION 16: Other information

Disclaimer: 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.

- Department issuing SDS: product safety department
- Contact:
  Agilent Technologies Manufacturing GmbH & Co. KG
  0900 603 1000
  pdl-msds_author@agilent.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
  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)
  VOC: Volatile Organic Compounds (USA, EU)
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  Ox. Liqu. 2: Oxidizing liquids – Category 2
  Skin Corr. 1A: Skin corrosion/irritation – Category 1A
  Skin Irrit. 2: Skin corrosion/irritation – Category 2
  Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
SECTION 1: Identification of the substance/mixture and of the company/undertaking

- English additional compounds
  - 1.1 Product identifier
    - Product Name: High Sensitivity Tune, Part Number ZHP-21-500
    - Part Number: ZHP-21-500

- 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
    Reagents and Standards for Analytical Chemistry Laboratory Use
    A 500 mL Solution

- 1.3 Details of the supplier of the safety data sheet
  - Manufacturer/Supplier:
    Agilent Technologies Manufacturing GmbH & Co. KG
    Hewlett-Packard-Str. 8
    76337 Waldbronn
    Germany
  - Further information obtainable from: product safety department
  - 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

GHS07
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.

- 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

GHS07

- Signal word Warning
- Hazard statements
  - Causes skin irritation.
  - Causes serious eye irritation.
- 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.
    Wear protective gloves / eye protection / face protection.
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - If skin irritation occurs: Get medical advice/attention.
  - Take off contaminated clothing and wash it before reuse.
  - If eye irritation persists: Get medical advice/attention.

- 2.3 Other hazards
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

(Contd. on page 2)
SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.

- Dangerous components:
  - CAS: 7697-37-2  nitric acid  Ox. Liq. 2, H272; Skin Corr. 1A, H314  2.0%
  - CAS: 7439-95-4  magnesium  Pyr. Sol. 1, H250; Water-react. 1, H260  <0.0001%
  - CAS: 10102-45-1  thallium nitrate  Acute Tox. 2, H300; Acute Tox. 2, H330; STOT RE 2, H373; Aquatic Chronic 2, H411  <0.0001%
  - CAS: 7440-45-1  cerium  Ox. Liq. 2, H272; Eye Dam. 1, H318  <0.0001%
  - CAS: 7440-65-5  yttrium  <0.0001%
  - CAS: 554-13-2  lithium carbonate  Acute Tox. 4, H302; Eye Irrit. 2, H319  <0.0001%
  - CAS: 7732-18-5  water, distilled, conductivity or of similar purity  97.9995%

- Additional information: For the wording of the listed hazard 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 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. If symptoms persist, consult a doctor.
  - After swallowing: Do not give anything to eat or drink - Do not induce vomiting

- 4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
  - Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

- 5.2 Special hazards arising from the substance or mixture No further relevant information available.

- 5.3 Advice for firefighters
  - Protective equipment: No special measures required.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures Not required.

- 6.2 Environmental precautions: No special measures required.

- 6.3 Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Ensure adequate ventilation.

- 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/exhaustion at the workplace.
Prevent formation of aerosols.

Information about fire - and explosion protection: No special measures required.

7.2 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.

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
WEL Short-term value: 2.6 mg/m³, 1 ppm

Additional information: The lists valid during the making were used as basis.

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:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves
Nitrile Glove
Thickness: ≥ 0.11 mm
Breakthrough time: > 480 minutes

Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Tightly sealed goggles

(Contd. on page 4)
### SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
  - **General Information**
  - **Appearance:** Liquid
  - **Colour:** Colourless
  - **Odour:** Odourless
  - **pH-value:** <1

- **Change in condition**
  - **Melting point/freezing point:** 0°C (32°F)
  - **Initial boiling point and boiling range:** 100°C (212°F)

- **Flash point:** Not applicable.

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

- **Decomposition temperature:** Not applicable.

- **Auto-ignition temperature:** Product is not selfigniting.

- **Explosive properties:** Product does not present an explosion hazard.

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

- **Vapour pressure at 20 °C:** 23 hPa

- **Density:** 1.0 g/mL @ 20°C
  - **Relative density** Not applicable.
  - **Vapour density** Not applicable.
  - **Evaporation rate** Not applicable.

- **Solubility in / Miscibility with water:** Miscible

- **Partition coefficient: n-octanol/water:** Not applicable.

- **Viscosity**
  - **Dynamic:** Not applicable.
  - **Kinematic:** Not applicable.

- **Solvent content**
  - **Water:** 98.0 %
  - **VOC (EC):** 0.00 %

- **Solids content:** 0.0 %

- **9.2 Other information**
  - No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.

- **10.2 Chemical stability**
  - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

- **10.3 Possibility of hazardous reactions** No dangerous reactions known.

- **10.4 Conditions to avoid** No further relevant information available.

- **10.5 Incompatible materials** No further relevant information available.

- **10.6 Hazardous decomposition products** No dangerous decomposition products known.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**

- **Acute toxicity** Based on available data, the classification criteria are not met.
### SECTION 12: Ecological information

- **12.1 Toxicity**
  - Aquatic toxicity: No further relevant information available.
- **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: Generally not hazardous for water
- **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 together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
  - Recommendation: Disposal must be made according to official regulations.

### SECTION 14: Transport information

- **14.1 UN-Number**
  - ADR, IMDG, IATA: UN3264
- **14.2 UN proper shipping name**
  - ADR: 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
  - IMDG, IATA: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
- **14.3 Transport hazard class(es)**
  - ADR, IMDG, IATA: 8 Corrosive substances.
  - Class: 8
  - Label: 8
- **14.4 Packing group**
  - ADR, IMDG, IATA: III

(Contd. on page 6)
· 14.5 Environmental hazards: Not applicable.

· 14.6 Special precautions for user
  - Danger code (Kemler): Warning: Corrosive substances.
  - EMS Number: 80, F-A,S-B
  - Segregation groups: Acids
  - Stowage Category: A
  - Stowage Code: SW2 Clear of living quarters.

· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code Not applicable.

事发表/Additional information:

· ADR
  - 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
  - Transport category: 3
  - Tunnel restriction code: E

· 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 SOLUTION), 8, III

SECTION 15: Regulatory information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I: None of the ingredients is listed.
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

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

SECTION 16: Other information

Disclaimer: 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
  H250 Catches fire spontaneously if exposed to air.
  H260 In contact with water releases flammable gases which may ignite spontaneously.
  H272 May intensify fire; oxidiser.
  H300 Fatal if swallowed.
  H302 Harmful if swallowed.
  H314 Causes severe skin burns and eye damage.
  H318 Causes serious eye damage.
  H319 Causes serious eye irritation.
  H330 Fatal if inhaled.
  H373 May cause damage to organs through prolonged or repeated exposure.
  H411 Toxic to aquatic life with long lasting effects.

· Department issuing SDS: product safety department
· Contact:
  Agilent Technologies Manufacturing GmbH & Co. KG
  0900 603 1300
  pdl-msds_author@agilent.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)
**Product Name:** High Sensitivity Tune, Part Number ZHP-21-500

<table>
<thead>
<tr>
<th>IMDG: International Maritime Code for Dangerous Goods</th>
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<tbody>
<tr>
<td>IATA: International Air Transport Association</td>
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<td>GHS: Globally Harmonised System of Classification and Labelling of Chemicals</td>
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<td>EINECS: European Inventory of Existing Commercial Chemical Substances</td>
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<td>ELINCS: European List of Notified Chemical Substances</td>
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<td>CAS: Chemical Abstracts Service (division of the American Chemical Society)</td>
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<td>VOC: Volatile Organic Compounds (USA, EU)</td>
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<td>PBT: Persistent, Bioaccumulative and Toxic</td>
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<tr>
<td>vP/vB: very Persistent and very Bioaccumulative</td>
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<tr>
<td>Ox. Liq. 2: Oxidizing liquids – Category 2</td>
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<tr>
<td>Skin Corr. 1A: Skin corrosion/irritation – Category 1A</td>
</tr>
<tr>
<td>Skin Irrit. 2: Skin corrosion/irritation – Category 2</td>
</tr>
<tr>
<td>Eye Irrit. 2: Serious eye damage/eye irritation – Category 2</td>
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