1 Identification

· Product identifier
  · Trade name: ICP-MS-68A-A
  · Article number: ICP-MS-68A-A

· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier:
    High-Purity Standards
    Address PO Box 41727 Charleston, SC 29423 United States
    Telephone +1-843-767-7900
    Fax +1-843-767-7906
    Website highpuritystandards.com
    Email info@highpuritystandards.com

· Information department: Product safety department
  · Emergency telephone number:
    INFOTRAC
    Emergency telephone numbers 1-800-535-5053
    Other emergency telephone numbers 1-352-323-3500

2 Hazard(s) identification

· Classification of the substance or mixture
  GHS05 Corrosion
  Met. Corr. 1  H290  May be corrosive to metals.
  Skin Corr. 1A  H314  Causes severe skin burns and eye damage.
  Eye Dam. 1  H318  Causes serious eye damage.

· Label elements
  · GHS label elements: The product is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms

  GHS05

· Signal word: Danger

· Hazard-determining components of labeling:
  nitric acid

· Hazard statements
  H290 May be corrosive to metals.
  H314 Causes severe skin burns and eye damage.

· Precautionary statements
  Keep only in original container.
  Do not breathe dusts or mists.
  Wash thoroughly after handling.
  Wear protective gloves/protective clothing/eye protection/face protection.
  If swallowed: Rinse mouth. Do NOT induce vomiting.

(Contd. on page 2)
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If INHALED: Remove person to fresh air and keep comfortable for breathing.
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).
Absorb spillage to prevent material damage.
Store locked up.
Store in corrosive resistant container with a resistant inner liner.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:
- NFPA ratings (scale 0 - 4)
  - Health = 3
  - Fire = 0
  - Reactivity = 0

- HMIS-ratings (scale 0 - 4)
  - Health = 3
  - Fire = 0
  - Reactivity = 0

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

3 Composition/information on ingredients
- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Dangerous components:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2 nitric acid</td>
<td>2.0%</td>
</tr>
</tbody>
</table>

- Chemical identification of the substance/preparation
  - 7440-38-2 arsenic 0.001%
  - 513-77-9 barium carbonate 0.001%
  - 543-81-7 beryllium acetate 0.001%
  - 7440-69-9 bismuth 0.001%
  - 10043-35-3 boric acid 0.001%
  - 7440-43-9 cadmium (non-pyrophoric) 0.001%
  - 471-34-1 calcium carbonate 0.001%
  - 1306-38-3 cerium dioxide 0.001%
  - 21351-79-1 caesium hydroxide 0.001%
  - 7440-47-3 chromium 0.001%
  - 7440-48-4 cobalt 0.001%
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<thead>
<tr>
<th>Trade name: ICP-MS-68A-A</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-50-8 copper</td>
<td>0.001%</td>
</tr>
<tr>
<td>7429-91-6 dysprosium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-52-0 erbium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-53-1 europium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-54-2 gadolinium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-55-3 gallium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-60-0 holmium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-74-6 indium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7439-89-6 iron</td>
<td>0.001%</td>
</tr>
<tr>
<td>1312-81-8 lanthanum oxide</td>
<td>0.001%</td>
</tr>
<tr>
<td>7439-92-1 lead</td>
<td>0.001%</td>
</tr>
<tr>
<td>554-13-2 lithium carbonate</td>
<td>0.001%</td>
</tr>
<tr>
<td>12032-20-1 lutetium oxide</td>
<td>0.001%</td>
</tr>
<tr>
<td>7439-95-4 magnesium</td>
<td>0.001%</td>
</tr>
<tr>
<td>6156-78-1 Manganese(II) acetate tetrahydrate</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-00-8 neodymium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-02-0 nickel</td>
<td>0.001%</td>
</tr>
<tr>
<td>7722-76-1 Ammonium dihydrogenphosphate</td>
<td>0.001%</td>
</tr>
<tr>
<td>7757-79-1 potassium nitrate</td>
<td>0.001%</td>
</tr>
<tr>
<td>12037-29-5 Praseodymium(III,IV) oxide</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-13-5 rhenium</td>
<td>0.001%</td>
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<tr>
<td>584-09-8 rubidium carbonate</td>
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</tr>
<tr>
<td>7440-19-9 samarium</td>
<td>0.001%</td>
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<tr>
<td>12060-08-1 scandium oxide</td>
<td>0.001%</td>
</tr>
<tr>
<td>7782-49-2 selenium</td>
<td>0.001%</td>
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<tr>
<td>497-19-8 sodium carbonate</td>
<td>0.001%</td>
</tr>
<tr>
<td>10042-76-9 strontium nitrate</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-27-9 terbium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-28-0 thallium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-29-1 thorium</td>
<td>0.001%</td>
</tr>
<tr>
<td>12036-44-1 thulium oxide</td>
<td>0.001%</td>
</tr>
<tr>
<td>10102-06-4 Uranyl nitrate</td>
<td>0.001%</td>
</tr>
<tr>
<td>7803-55-6 Ammonium Vanadate</td>
<td>0.001%</td>
</tr>
<tr>
<td>1314-37-0 ytterbium (III) oxide</td>
<td>0.001%</td>
</tr>
<tr>
<td>1314-36-9 yttrium oxide</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-66-6 zinc</td>
<td>0.001%</td>
</tr>
<tr>
<td>7429-90-5 aluminium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7732-18-5 water, distilled, conductivity or of similar purity</td>
<td>97.952%</td>
</tr>
</tbody>
</table>
4 First-aid measures

- Description of first aid measures
  - General information: Immediately remove any clothing soiled by the product.
  - After inhalation: In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact: Immediately wash with water and soap and rinse thoroughly.
  - After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
  - After swallowing: Drink copious amounts of water and provide fresh air. Immediately call a doctor.
  - Information for doctor:
    - Most important symptoms and effects, both acute and delayed: No further relevant information available.
    - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture
  - During heating or in case of fire poisonous gases are produced.
- Advice for firefighters
- Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  - Mount respiratory protective device.
  - Wear protective equipment. Keep unprotected persons away.
  - Environmental precautions: No special measures required.
- Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Use neutralizing agent.
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- 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.
- Protective Action Criteria for Chemicals

- PAC-1:
  - 7697-37-2 nitric acid 0.16 ppm
  - 7440-38-2 arsenic 1.5 mg/m³
  - 513-77-9 barium carbonate 2.2 mg/m³
  - 7440-69-9 bismuth 15 mg/m³
  - 10043-35-3 boric acid 6 mg/m³
  - 7440-43-9 cadmium (non-pyrophoric) 0.10 mg/m³
  - 471-34-1 calcium carbonate 45 mg/m³

(Contd. on page 5)
### Trade name: ICP-MS-68A-A

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Chemical</th>
<th>Limit</th>
</tr>
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<tbody>
<tr>
<td>1306-38-3</td>
<td>cerium dioxide</td>
<td>3 mg/m³</td>
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<tr>
<td>21351-79-1</td>
<td>caesium hydroxide</td>
<td>6 mg/m³</td>
</tr>
<tr>
<td>7440-47-3</td>
<td>chromium</td>
<td>1.5 mg/m³</td>
</tr>
<tr>
<td>7440-48-4</td>
<td>cobalt</td>
<td>0.18 mg/m³</td>
</tr>
<tr>
<td>7440-50-8</td>
<td>copper</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td>7429-91-6</td>
<td>dysprosium</td>
<td>30 mg/m³</td>
</tr>
<tr>
<td>7440-53-1</td>
<td>europium</td>
<td>30 mg/m³</td>
</tr>
<tr>
<td>7440-54-2</td>
<td>gadolinium</td>
<td>30 mg/m³</td>
</tr>
<tr>
<td>7440-55-3</td>
<td>gallium</td>
<td>30 mg/m³</td>
</tr>
<tr>
<td>7440-60-0</td>
<td>holmium</td>
<td>12 mg/m³</td>
</tr>
<tr>
<td>7440-74-6</td>
<td>indium</td>
<td>0.3 mg/m³</td>
</tr>
<tr>
<td>7439-89-6</td>
<td>iron</td>
<td>3.2 mg/m³</td>
</tr>
<tr>
<td>1312-81-8</td>
<td>lanthanum oxide</td>
<td>4 mg/m³</td>
</tr>
<tr>
<td>7439-92-1</td>
<td>lead</td>
<td>0.15 mg/m³</td>
</tr>
<tr>
<td>554-13-2</td>
<td>lithium carbonate</td>
<td>3.1 mg/m³</td>
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<tr>
<td>12032-20-1</td>
<td>lutetium oxide</td>
<td>30 mg/m³</td>
</tr>
<tr>
<td>7439-93-4</td>
<td>magnesium</td>
<td>18 mg/m³</td>
</tr>
<tr>
<td>6156-78-1</td>
<td>Manganese(II) acetate tetrahydrate</td>
<td>13 mg/m³</td>
</tr>
<tr>
<td>7440-00-8</td>
<td>neodymium</td>
<td>30 mg/m³</td>
</tr>
<tr>
<td>7440-02-0</td>
<td>nickel</td>
<td>4.5 mg/m³</td>
</tr>
<tr>
<td>7722-76-1</td>
<td>Ammonium dihydrogenphosphate</td>
<td>17 mg/m³</td>
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<tr>
<td>7757-79-1</td>
<td>potassium nitrate</td>
<td>9 mg/m³</td>
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<tr>
<td>12037-29-5</td>
<td>Praseodymium(III,IV) oxide</td>
<td>15 mg/m³</td>
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</tbody>
</table>

**PAC-2:**

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Chemical</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2</td>
<td>nitric acid</td>
<td>24 ppm</td>
</tr>
<tr>
<td>7440-38-2</td>
<td>arsenic</td>
<td>17 mg/m³</td>
</tr>
<tr>
<td>513-77-9</td>
<td>barium carbonate</td>
<td>270 mg/m³</td>
</tr>
<tr>
<td>7440-69-9</td>
<td>bismuth</td>
<td>170 mg/m³</td>
</tr>
<tr>
<td>10043-35-3</td>
<td>boric acid</td>
<td>23 mg/m³</td>
</tr>
<tr>
<td>7440-43-9</td>
<td>cadmium (non-pyrophoric)</td>
<td>0.76 mg/m³</td>
</tr>
<tr>
<td>471-34-1</td>
<td>calcium carbonate</td>
<td>210 mg/m³</td>
</tr>
<tr>
<td>1306-38-3</td>
<td>cerium dioxide</td>
<td>33 mg/m³</td>
</tr>
<tr>
<td>21351-79-1</td>
<td>caesium hydroxide</td>
<td>19 mg/m³</td>
</tr>
<tr>
<td>7440-47-3</td>
<td>chromium</td>
<td>17 mg/m³</td>
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<tr>
<td>7440-48-4</td>
<td>cobalt</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>7440-50-8</td>
<td>copper</td>
<td>33 mg/m³</td>
</tr>
<tr>
<td>7429-91-6</td>
<td>dysprosium</td>
<td>330 mg/m³</td>
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<tr>
<td>7440-53-1</td>
<td>europium</td>
<td>330 mg/m³</td>
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<tr>
<td>7440-54-2</td>
<td>gadolinium</td>
<td>330 mg/m³</td>
</tr>
<tr>
<td>7440-55-3</td>
<td>gallium</td>
<td>330 mg/m³</td>
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</table>
### Trade name: ICP-MS-68A-A

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Chemical</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-60-0</td>
<td>holmium</td>
<td>130 mg/m³</td>
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<tr>
<td>7440-74-6</td>
<td>indium</td>
<td>3.3 mg/m³</td>
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<tr>
<td>7439-89-6</td>
<td>iron</td>
<td>33 mg/m³</td>
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<tr>
<td>1312-81-8</td>
<td>lanthanum oxide</td>
<td>44 mg/m³</td>
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<tr>
<td>7439-92-1</td>
<td>lead</td>
<td>120 mg/m³</td>
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<tr>
<td>554-13-2</td>
<td>lithium carbonate</td>
<td>34 mg/m³</td>
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<tr>
<td>12032-20-1</td>
<td>lutetium oxide</td>
<td>330 mg/m³</td>
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<tr>
<td>7439-95-4</td>
<td>magnesium</td>
<td>200 mg/m³</td>
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<tr>
<td>6156-78-1</td>
<td>Manganese(II) acetate tetrahydrate</td>
<td>22 mg/m³</td>
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<tr>
<td>7440-00-8</td>
<td>neodymium</td>
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<tr>
<td>7440-02-0</td>
<td>nickel</td>
<td>50 mg/m³</td>
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<tr>
<td>7722-76-1</td>
<td>Ammonium dihydrogenphosphate</td>
<td>900 mg/m³</td>
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<tr>
<td>7757-79-1</td>
<td>potassium nitrate</td>
<td>190 mg/m³</td>
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<tr>
<td>12037-29-5</td>
<td>Praseodymium(III,IV) oxide</td>
<td>170 mg/m³</td>
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### PAC-3:

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<tr>
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<th>Chemical</th>
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<tbody>
<tr>
<td>7697-37-2</td>
<td>nitric acid</td>
<td>92 ppm</td>
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<tr>
<td>7440-38-2</td>
<td>arsenic</td>
<td>100 mg/m³</td>
</tr>
<tr>
<td>513-77-9</td>
<td>barium carbonate</td>
<td>1,600 mg/m³</td>
</tr>
<tr>
<td>7440-69-9</td>
<td>bismuth</td>
<td>990 mg/m³</td>
</tr>
<tr>
<td>10043-33-3</td>
<td>boric acid</td>
<td>830 mg/m³</td>
</tr>
<tr>
<td>7440-43-9</td>
<td>cadmium (non-pyrophoric)</td>
<td>4.7 mg/m³</td>
</tr>
<tr>
<td>471-34-1</td>
<td>calcium carbonate</td>
<td>1,300 mg/m³</td>
</tr>
<tr>
<td>1306-38-3</td>
<td>cerium dioxide</td>
<td>200 mg/m³</td>
</tr>
<tr>
<td>21351-79-1</td>
<td>caesium hydroxide</td>
<td>110 mg/m³</td>
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<tr>
<td>7440-47-3</td>
<td>chromium</td>
<td>99 mg/m³</td>
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<td>7440-48-4</td>
<td>cobalt</td>
<td>20 mg/m³</td>
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<tr>
<td>7440-50-8</td>
<td>copper</td>
<td>200 mg/m³</td>
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<tr>
<td>7429-91-6</td>
<td>dysprosium</td>
<td>2,000 mg/m³</td>
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<tr>
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<td>europium</td>
<td>2,000 mg/m³</td>
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<td>gadolinium</td>
<td>2,000 mg/m³</td>
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<td>7440-55-3</td>
<td>gallium</td>
<td>2,000 mg/m³</td>
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<td>holmium</td>
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<td>indium</td>
<td>20 mg/m³</td>
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<td>7439-89-6</td>
<td>iron</td>
<td>150 mg/m³</td>
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<tr>
<td>1312-81-8</td>
<td>lanthanum oxide</td>
<td>270 mg/m³</td>
</tr>
<tr>
<td>7439-92-1</td>
<td>lead</td>
<td>700 mg/m³</td>
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<tr>
<td>554-13-2</td>
<td>lithium carbonate</td>
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<tr>
<td>12032-20-1</td>
<td>lutetium oxide</td>
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<tr>
<td>7439-95-4</td>
<td>magnesium</td>
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<tr>
<td>6156-78-1</td>
<td>Manganese(II) acetate tetrahydrate</td>
<td>740 mg/m³</td>
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Trade name: ICP-MS-68A-A

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<th>Substance</th>
<th>Concentration</th>
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<tr>
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<td>neodymium</td>
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<td>7440-02-0</td>
<td>nickel</td>
<td>99 mg/m³</td>
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<tr>
<td>7722-76-1</td>
<td>Ammonium dihydrogenphosphate</td>
<td>1,100 mg/m³</td>
</tr>
<tr>
<td>7757-79-1</td>
<td>potassium nitrate</td>
<td>600 mg/m³</td>
</tr>
<tr>
<td>12037-29-5</td>
<td>Praseodymium(III,IV) oxide</td>
<td>990 mg/m³</td>
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</tbody>
</table>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
  
  Ensure good ventilation/exhaustion at the workplace.
  Prevent formation of aerosols.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **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 receptacle tightly sealed.
    - **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
  
  - **Components with limit values that require monitoring at the workplace:**
    
    |CAS Number| Substance                        | PEL Long-term value: 5 mg/m³, 2 ppm | REL Short-term value: 10 mg/m³, 4 ppm |
    |-----------|----------------------------------|-------------------------------------|-------------------------------------|
    | 7697-37-2 | nitric acid                      |                                     |                                     |
    |           |                                  | **PEL** Long-term value: 5 mg/m³, 2 ppm | **REL** Short-term value: 10 mg/m³, 4 ppm |
    |           |                                  | **Long-term value: 5 mg/m³, 2 ppm** | **Long-term value: 5 mg/m³, 2 ppm** |
    |           |                                  |                                     |                                     |
  
  - **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
  
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing.
  Wash hands before breaks and at the end of work.
  Avoid contact with the eyes.
  Avoid contact with the eyes and skin.
- **Breathing equipment:**
  
  In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Trade name: ICP-MS-68A-A

· 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

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· 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

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

  · Appearance:
    Form: Liquid
    Color: colorless
  · Odor: Characteristic
  · Odor threshold: Not determined.

  · pH-value: Not determined.

· Change in condition

  Melting point/Melting range: Undetermined.
  Boiling point/Boiling range: 100 °C (212 °F)

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not applicable.

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product does not present an explosion hazard.

· Explosion limits:
  Lower: Not determined.
  Upper: Not determined.
47.1.4

· Vapor pressure at 20 °C (68 °F): 23 hPa (17.3 mm Hg)

· Density: Not determined.
· Relative density: Not determined.
· Vapor density: Not determined.
· Evaporation rate: Not determined.

· Solubility in / Miscibility with Water: Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water): Not determined.

· Viscosity:
  Dynamic: Not determined.
  Kinematic: Not determined.

· Solvent content:
  Water: 98.0 %
  VOC content:
    0.00 %
    0.0 g/l / 0.00 lb/gal

· Solids content: 0.0 %

· Other information No further relevant information available.

10 Stability and reactivity

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

11 Toxicological information

· Information on toxicological effects
  · Acute toxicity:
  · Primary irritant effect:
    · on the skin: Strong caustic effect on skin and mucous membranes.
    · on the eye:
      Strong caustic effect.
      Strong irritant with the danger of severe eye injury.
  · Sensitization: No sensitizing effects known.
  · Additional toxicological information:
    The product shows the following dangers according to internally approved calculation methods for preparations:
    Corrosive
    Irritant
    Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

(Contd. on page 10)
Carcinogenic categories

- **IARC (International Agency for Research on Cancer)**
  - 7440-38-2 arsenic 1
  - 543-81-7 beryllium acetate 1
  - 7440-43-9 cadmium (non-pyrophoric) 1
  - 7440-47-3 chromium 3
  - 7440-48-4 cobalt 2B
  - 7439-92-1 lead 2B
  - 7440-02-0 nickel 2B
  - 7782-49-2 selenium 3
  - 7440-29-1 thorium 1

- **NTP (National Toxicology Program)**
  - 7440-38-2 arsenic K
  - 543-81-7 beryllium acetate K
  - 7440-43-9 cadmium (non-pyrophoric) K
  - 7440-48-4 cobalt R
  - 7439-92-1 lead R
  - 7440-02-0 nickel R

- **OSHA-Ca (Occupational Safety & Health Administration)**
  - 7440-38-2 arsenic
  - 7440-43-9 cadmium (non-pyrophoric)

### Ecological information

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability:** No further relevant information available.
  - **Behavior in environmental systems:**
    - **Bioaccumulative potential:** No further relevant information available.
    - **Mobility in soil** No further relevant information available.
  - **Additional ecological information:**
  - **General notes:**
    - Generally not hazardous for water
    - Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- **Results of PBT and vPvB assessment**
  - **PBT:** Not applicable.
  - **vPvB:** Not applicable.
  - **Other adverse effects** No further relevant information available.
13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
  Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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

14 Transport information

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

- **UN proper shipping name**
  - DOT Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)
  - ADR 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)
  - IMDG, IATA CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)

- **Transport hazard class(es)**
  - DOT
    - **Class** 8 Corrosive substances
    - **Label** 8
  - ADR, IMDG, IATA
    - **Class** 8 Corrosive substances
    - **Label** 8
  
- **Packing group**
  - DOT, ADR, IMDG, IATA III

- **Environmental hazards:** Not applicable.

- **Special precautions for user** Warning: Corrosive substances
- **Danger code (Kemler):** 80
- **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 MARPOL73/78 and the IBC Code** Not applicable.
Trade name: ICP-MS-68A-A

15 Regulatory information

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

- Section 355 (extremely hazardous substances):
  - 7697-37-2 nitric acid

- Section 313 (Specific toxic chemical listings):
  - 7697-37-2 nitric acid
  - 7440-38-2 arsenic
  - 513-77-9 barium carbonate
  - 543-81-7 beryllium acetate
  - 7440-43-9 cadmium (non-pyrophoric)
  - 7440-47-3 chromium
  - 7440-48-4 cobalt
  - 7440-50-8 copper
  - 7439-92-1 lead
  - 554-13-2 lithium carbonate
  - 7440-02-0 nickel
  - 7757-79-1 potassium nitrate
  - 7782-49-2 selenium
  - 10042-76-9 strontium nitrate
  - 7440-28-0 thallium
  - 7803-55-6 Ammonium Vanadate
  - 7440-66-6 zinc
  - 7429-90-5 aluminium
Trade name: ICP-MS-68A-A

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<th>TSCA (Toxic Substances Control Act):</th>
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<td>7440-69-9 bismuth</td>
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<td>10043-35-3 boric acid</td>
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<td>7440-43-9 cadmium (non-pyrophoric)</td>
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<tr>
<td>1306-38-3 cerium dioxide</td>
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<tr>
<td>21351-79-1 caesium hydroxide</td>
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<td>7440-50-8 copper</td>
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<td>7440-52-0 erbium</td>
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<td>7439-92-1 lead</td>
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<tr>
<td>554-13-2 lithium carbonate</td>
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<tr>
<td>12032-20-1 lutetium oxide</td>
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<tr>
<td>7439-95-4 magnesium</td>
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<td>7440-00-8 neodymium</td>
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</tr>
<tr>
<td>7440-02-0 nickel</td>
<td></td>
</tr>
<tr>
<td>7722-76-1 Ammonium dihydrogenphosphate</td>
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</tr>
<tr>
<td>7757-79-1 potassium nitrate</td>
<td></td>
</tr>
<tr>
<td>12037-29-5 Praseodymium(III,IV) oxide</td>
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<table>
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<th>Proposition 65</th>
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<tbody>
<tr>
<td>Chemicals known to cause cancer:</td>
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<tr>
<td>7440-38-2 arsenic</td>
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<tr>
<td>543-81-7 beryllium acetate</td>
<td></td>
</tr>
<tr>
<td>7440-43-9 cadmium (non-pyrophoric)</td>
<td></td>
</tr>
<tr>
<td>7440-48-4 cobalt</td>
<td></td>
</tr>
<tr>
<td>7439-92-1 lead</td>
<td></td>
</tr>
<tr>
<td>7440-02-0 nickel</td>
<td></td>
</tr>
</tbody>
</table>

(Contd. of page 12)
### Chemicals known to cause reproductive toxicity for females:
- 7439-92-1 lead

### Chemicals known to cause reproductive toxicity for males:
- 7440-43-9 cadmium (non-pyrophoric)
- 7439-92-1 lead

### Chemicals known to cause developmental toxicity:
- 7440-43-9 cadmium (non-pyrophoric)
- 7439-92-1 lead
- 554-13-2 lithium carbonate

### Carcinogenic categories
#### EPA (Environmental Protection Agency) (Substances not listed)
- 7697-37-2 nitric acid
- 543-81-7 beryllium acetate
- 7440-69-9 bismuth
- 471-34-1 calcium carbonate
- 21351-79-1 caesium hydroxide
- 7440-48-4 cobalt
- 7429-91-6 dysprosium
- 7440-52-0 erbium
- 7440-53-1 europium
- 7440-54-2 gadolinium
- 7440-55-3 gallium
- 7440-60-0 holmium
- 7440-74-6 indium
- 7439-89-6 iron
- 1312-81-8 lanthanum oxide
- 554-13-2 lithium carbonate
- 12032-20-1 lutetium oxide
- 7439-95-4 magnesium
- 6156-78-1 Manganese(II) acetate tetrahydrate
- 7440-00-8 neodymium
- 7440-02-0 nickel
- 7722-76-1 Ammonium dihydrogenphosphate
- 7757-79-1 potassium nitrate
- 12037-29-5 Praseodymium(III,IV) oxide
- 7440-15-5 rhenium
- 584-09-8 rubidium carbonate
- 7440-19-9 samarium
- 12060-08-1 scandium oxide
- 497-19-8 sodium carbonate
Trade name: ICP-MS-68A-A

10042-76-9 strontium nitrate

- **TLV (Threshold Limit Value established by ACGIH)**
  - 7440-38-2 arsenic A1
  - 513-77-9 barium carbonate A4
  - 10043-35-3 boric acid A4
  - 7440-43-9 cadmium (non-pyrophoric) A2
  - 7440-47-3 chromium A4
  - 7440-48-4 cobalt A3
  - 7439-92-1 lead A3
  - 7440-02-0 nickel A5
  - 7429-90-5 aluminium A4

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**
  - 7440-38-2 arsenic
  - 7440-43-9 cadmium (non-pyrophoric)
  - 7440-02-0 nickel

- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**
  - GHS05

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  - nitric acid

- **Hazard statements**
  - H290 May be corrosive to metals.
  - H314 Causes severe skin burns and eye damage.

- **Precautionary statements**
  - Keep only in original container.
  - Do not breathe dusts or mists.
  - Wash thoroughly after handling.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - If swallowed: Rinse mouth. Do NOT induce vomiting.
  - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - If INHALED: Remove person to fresh air and keep comfortable for breathing.
  - 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).
  - Wash contaminated clothing before reuse.
  - Absorb spillage to prevent material damage.
  - Store locked up.
  - Store in corrosive resistant container with a resistant inner liner.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.
16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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

- **Department issuing SDS:** Environment protection department.

- **Contact:**
  High-Purity Standards  
  Tel: 843-767-7900  
  Fax: 843-767-7906

- **Date of preparation / last revision:** 07/23/2019 / -

- **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
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - 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)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Met. Corr. 1: Corrosive to metals – Category 1
  - Skin Corr. 1A: Skin corrosion/irritation – Category 1A
  - Eye Dam. 1: Serious eye damage/eye irritation – Category 1
1 Identification

- **Product identifier**
- **Trade name:** Stock ICP Standard
- **Article number:** ICP-MS-68A-B

- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
  High-Purity Standards
  Address PO Box 41727 Charleston, SC 29423 United States
  Telephone +1-843-767-7900
  Fax +1-843-767-7906
  Website highpuritystandards.com
  Email info@highpuritystandards.com

- **Information department:** Product safety department
- **Emergency telephone number:**
  INFOTRAC
  Emergency telephone numbers 1-800-535-5053
  Other emergency telephone numbers 1-352-323-3500

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS05 Corrosion
    - Met. Corr. 1  H290  May be corrosive to metals.
    - Skin Corr. 1A  H314  Causes severe skin burns and eye damage.
    - Eye Dam. 1  H318  Causes serious eye damage.

  - GHS07
    - Acute Tox. 4  H312  Harmful in contact with skin.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**
  - GHS05
  - GHS07

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  - nitric acid
  - Hydrofluoric acid

- **Hazard statements**
  - H290 May be corrosive to metals.
  - H312 Harmful in contact with skin.
Trade name: Stock ICP Standard

H314 Causes severe skin burns and eye damage.

· **Precautionary statements**
  Keep only in original container.
  Do not breathe dusts or mists.
  Wash thoroughly after handling.
  Wear protective gloves/protective clothing/eye protection/face protection.
  If swallowed: Rinse mouth. Do NOT induce vomiting.
  If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  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).

· **Classification system:**
  · **NFPA ratings (scale 0 - 4)**
    - Health = 3
    - Fire = 0
    - Reactivity = 0
  · **HMIS-ratings (scale 0 - 4)**
    - HEALTH Health = 3
    - FIRE Fire = 0
    - REACTIVITY Reactivity = 0

· **Other hazards**
  · Results of PBT and vPvB assessment
    · PBT: Not applicable.
    · vPvB: Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
  · Description: Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**
  - 7697-37-2 nitric acid 2.0%

· **Chemical identification of the substance/preparation**

<table>
<thead>
<tr>
<th>Chemical code</th>
<th>Chemical name</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>7664-39-3</td>
<td>Hydrofluoric acid</td>
<td>0.49%</td>
</tr>
<tr>
<td>7440-58-6</td>
<td>hafnium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7439-98-7</td>
<td>molybdenum</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-03-1</td>
<td>niobium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-21-3</td>
<td>silicon</td>
<td>0.001%</td>
</tr>
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(Contd. on page 3)
Trade name: Stock ICP Standard

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Substance</th>
<th>Concentration</th>
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<tbody>
<tr>
<td>7440-22-4</td>
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</tr>
<tr>
<td>7440-25-7</td>
<td>tantalum</td>
<td>0.001%</td>
</tr>
<tr>
<td>13494-80-9</td>
<td>tellurium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-31-5</td>
<td>tin</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-32-6</td>
<td>titanium</td>
<td>0.001%</td>
</tr>
<tr>
<td>7440-33-7</td>
<td>tungsten</td>
<td>0.001%</td>
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<td>7440-67-7</td>
<td>zirconium</td>
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</tr>
<tr>
<td>7440-56-4</td>
<td>germanium</td>
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<tr>
<td>7440-36-0</td>
<td>antimony</td>
<td>0.001%</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>water, distilled, conductivity or of similar purity</td>
<td>97.497%</td>
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</table>

4 First-aid measures

- **Description of first aid measures**
- **General information:**
  Immediately remove any clothing soiled by the product. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **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:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- **Information for doctor:**
  - Most important symptoms and effects, both acute and delayed No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
  No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
  During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  Mount respiratory protective device.
  Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up:**
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Use neutralizing agent.
  Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

- **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.

- **Protective Action Criteria for Chemicals**

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<th>PAC-1:</th>
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<td>nitric acid</td>
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<td>7664-39-3</td>
<td>Hydrofluoric acid</td>
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<td>7440-58-6</td>
<td>hafnium</td>
<td>1.5 mg/m³</td>
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<td>30 mg/m³</td>
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<td>24 ppm</td>
</tr>
<tr>
<td>7664-39-3</td>
<td>Hydrofluoric acid</td>
<td>24 ppm</td>
</tr>
<tr>
<td>7440-58-6</td>
<td>hafnium</td>
<td>17 mg/m³</td>
</tr>
<tr>
<td>7439-98-7</td>
<td>molybdenum</td>
<td>330 mg/m³</td>
</tr>
<tr>
<td>7440-03-1</td>
<td>niobium</td>
<td>330 mg/m³</td>
</tr>
<tr>
<td>7440-21-3</td>
<td>silicon</td>
<td>100 mg/m³</td>
</tr>
<tr>
<td>7440-22-4</td>
<td>silver</td>
<td>170 mg/m³</td>
</tr>
<tr>
<td>7440-25-7</td>
<td>tantalum</td>
<td>11 mg/m³</td>
</tr>
<tr>
<td>13494-80-9</td>
<td>tellurium</td>
<td>20 mg/m³</td>
</tr>
<tr>
<td>7440-31-5</td>
<td>tin</td>
<td>67 mg/m³</td>
</tr>
<tr>
<td>7440-32-6</td>
<td>titanium</td>
<td>330 mg/m³</td>
</tr>
<tr>
<td>7440-33-7</td>
<td>tungsten</td>
<td>330 mg/m³</td>
</tr>
<tr>
<td>7440-67-7</td>
<td>zirconium</td>
<td>85 mg/m³</td>
</tr>
<tr>
<td>7440-56-4</td>
<td>germanium</td>
<td>35 mg/m³</td>
</tr>
<tr>
<td>7440-36-0</td>
<td>antimony</td>
<td>13 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-3:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2</td>
<td>nitric acid</td>
<td>92 ppm</td>
</tr>
<tr>
<td>7664-39-3</td>
<td>Hydrofluoric acid</td>
<td>44 ppm</td>
</tr>
</tbody>
</table>
Trade name: Stock ICP Standard

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Element</th>
<th>Limit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-58-6</td>
<td>hafnium</td>
<td>99 mg/m³</td>
</tr>
<tr>
<td>7439-98-7</td>
<td>molybdenum</td>
<td>2,000 mg/m³</td>
</tr>
<tr>
<td>7440-03-1</td>
<td>niobium</td>
<td>2,000 mg/m³</td>
</tr>
<tr>
<td>7440-21-3</td>
<td>silicon</td>
<td>630 mg/m³</td>
</tr>
<tr>
<td>7440-22-4</td>
<td>silver</td>
<td>990 mg/m³</td>
</tr>
<tr>
<td>7440-25-7</td>
<td>tantalum</td>
<td>64 mg/m³</td>
</tr>
<tr>
<td>13494-80-9</td>
<td>tellurium</td>
<td>110 mg/m³</td>
</tr>
<tr>
<td>7440-31-5</td>
<td>tin</td>
<td>400 mg/m³</td>
</tr>
<tr>
<td>7440-32-6</td>
<td>titanium</td>
<td>2,000 mg/m³</td>
</tr>
<tr>
<td>7440-33-7</td>
<td>tungsten</td>
<td>2,000 mg/m³</td>
</tr>
<tr>
<td>7440-67-7</td>
<td>zirconium</td>
<td>500 mg/m³</td>
</tr>
<tr>
<td>7440-56-4</td>
<td>germanium</td>
<td>170 mg/m³</td>
</tr>
<tr>
<td>7440-36-0</td>
<td>antimony</td>
<td>80 mg/m³</td>
</tr>
</tbody>
</table>

7 Handling and storage

· Handling:
  · Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
  · Information about protection against explosions and fires: Keep respiratory protective device available.
  · 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 receptacle tightly sealed.
  · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

· Control parameters

· Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Component</th>
<th>Limit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2</td>
<td>nitric acid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PEL</td>
<td>Long-term value: 5 mg/m³, 2 ppm</td>
</tr>
<tr>
<td></td>
<td>REL</td>
<td>Short-term value: 10 mg/m³, 4 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long-term value: 5 mg/m³, 2 ppm</td>
</tr>
<tr>
<td></td>
<td>TLV</td>
<td>Short-term value: 10 mg/m³, 4 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long-term value: 5.2 mg/m³, 2 ppm</td>
</tr>
</tbody>
</table>

· Additional information: The lists that were valid during the creation were used as basis.
Exposure controls
Personal protective equipment:
General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
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 gloves material on consideration of the penetration times, rates of diffusion and the degradation
Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
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

9 Physical and chemical properties
Information on basic physical and chemical properties
General Information
Appearance:
Form: Liquid
Color: colorless
Odor: Characteristic
Odor threshold: Not determined.

pH-value:
Not determined.

Change in condition
Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 100 °C (212 °F)
## Safety Data Sheet

**Trade name:** Stock ICP Standard

### 10 Stability and reactivity

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

- Information on toxicological effects
- Acute toxicity:
  - LD/LC50 values that are relevant for classification:
    - 7664-39-3 Hydrofluoric acid
      - Oral LD50 1,276 mg/kg (rat)
    - Primary irritant effect:
      - on the skin: Strong caustic effect on skin and mucous membranes.
      - on the eye: Strong caustic effect. Strong irritant with the danger of severe eye injury.
      - Sensitization: No sensitizing effects known.
    - Additional toxicological information:
      The product shows the following dangers according to internally approved calculation methods for preparations:
      - Harmful
      - Corrosive
      - Irritant
      - Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    - None of the ingredients is listed.
  - NTP (National Toxicology Program)
    - None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    - None of the ingredients is listed.

Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
  - Behavior in environmental systems:
    - Bioaccumulative potential: No further relevant information available.
    - Mobility in soil: No further relevant information available.
  - Additional ecological information:
    - General notes:
      Water hazard class 1 (Self-assessment): slightly hazardous for water
      Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
      Must not reach bodies of water or drainage ditch undiluted or unneutralized.
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
Trade name: Stock ICP Standard

13 Disposal considerations

- Waste treatment methods
- Recommendation:
  Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
- Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
  DOT, ADR, IMDG, IATA  UN3264
- UN proper shipping name
  DOT  Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Hydrogen fluoride)
  ADR  3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Hydrogen fluoride)
  IMDG, IATA  CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROGEN FLUORIDE)
- Transport hazard class(es)
  DOT
    - Class 8 Corrosive substances
    - Label 8
  ADR, IMDG, IATA
    - Class 8 Corrosive substances
    - Label 8
  - Packing group
    - DOT, ADR, IMDG, IATA  III
- Environmental hazards:
  Not applicable.
- Special precautions for user
  Warning: Corrosive substances
  Danger code (Kemler): 80
  EMS Number: F-A.S-B
  Segregation groups Acids
Trade name: Stock ICP Standard

- **Stowage Category**: A
- **Stowage Code**: SW2 Clear of living quarters.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**: Not applicable.

**Transport/Additional information:**

- **DOT**
  - **Quantity limitations**: On passenger aircraft/rail: 5 L
  - On cargo aircraft only: 60 L

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

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

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

### 15 Regulatory information

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

  - **Sara**
    - **Section 355 (extremely hazardous substances):**
      - 7697-37-2 nitric acid
      - 7664-39-3 Hydrofluoric acid
      - 13494-80-9 tellurium
    - **Section 313 (Specific toxic chemical listings):**
      - 7697-37-2 nitric acid
      - 7664-39-3 Hydrofluoric acid
      - 7440-22-4 silver
      - 7440-36-0 antimony
    - **TSCA (Toxic Substances Control Act):**
      - All ingredients are listed.
  - **Proposition 65**
    - **Chemicals known to cause cancer:**
      - None of the ingredients is listed.
    - **Chemicals known to cause reproductive toxicity for females:**
      - None of the ingredients is listed.
Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.

Chemicals known to cause developmental toxicity:
None of the ingredients is listed.

Carcinogenic categories

- EPA (Environmental Protection Agency) (Substances not listed)
  - 7697-37-2 nitric acid
  - 7664-39-3 Hydrofluoric acid
  - 7440-58-6 hafnium
  - 7439-98-7 molybdenum
  - 7440-03-1 niobium
  - 7440-21-3 silicon
  - 7440-25-7 tantalum
  - 13494-80-9 tellurium
  - 7440-31-5 tin
  - 7440-32-6 titanium
  - 7440-33-7 tungsten
  - 7440-67-7 zirconium
  - 7440-56-4 germanium
  - 7440-36-0 antimony
  - 7732-18-5 water, distilled, conductivity or of similar purity

- TLV (Threshold Limit Value established by ACGIH)
  - 7439-98-7 molybdenum A3
  - 7440-67-7 zirconium A4

- NIOSH-Ca (National Institute for Occupational Safety and Health)
  None of the ingredients is listed.

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

Signal word Danger

Hazard-determining components of labeling:
- nitric acid
- Hydrofluoric acid

Hazard statements
- H290 May be corrosive to metals.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
**Trade name: Stock ICP Standard**

<table>
<thead>
<tr>
<th>· Precautionary statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep only in original container.</td>
</tr>
<tr>
<td>Do not breathe dusts or mists.</td>
</tr>
<tr>
<td>Wash thoroughly after handling.</td>
</tr>
<tr>
<td>Wear protective gloves/protective clothing/eye protection/face protection.</td>
</tr>
<tr>
<td>If swallowed: Rinse mouth. Do NOT induce vomiting.</td>
</tr>
<tr>
<td>If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.</td>
</tr>
<tr>
<td>IF INHALED: Remove person to fresh air and keep comfortable for breathing.</td>
</tr>
<tr>
<td>If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</td>
</tr>
<tr>
<td>Immediately call a poison center/doctor.</td>
</tr>
<tr>
<td>Specific treatment (see on this label).</td>
</tr>
<tr>
<td>Take off contaminated clothing and wash it before reuse.</td>
</tr>
<tr>
<td>Wash contaminated clothing before reuse.</td>
</tr>
<tr>
<td>Absorb spillage to prevent material damage.</td>
</tr>
<tr>
<td>Store locked up.</td>
</tr>
<tr>
<td>Store in corrosive resistant container with a resistant inner liner.</td>
</tr>
<tr>
<td>Dispose of contents/container in accordance with local/regional/national/international regulations.</td>
</tr>
</tbody>
</table>

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

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

| · Department issuing SDS: Environment protection department. |
| · Contact: |
| High-Purity Standards |
| Tel.: 843-767-7900 |
| Fax.: 843-767-7906 |

| · Date of preparation / last revision 07/23/2019 / - |
| · 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 |
| DOT: US Department of Transportation |
| IATA: International Air Transport Association |
| ACGIH: American Conference of Governmental Industrial Hygienists |
| 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) |
| NFPA: National Fire Protection Association (USA) |
| HMIS: Hazardous Materials Identification System (USA) |
| VOC: Volatile Organic Compounds (USA, EU) |
| LC50: Lethal concentration, 50 percent |
| LD50: Lethal dose, 50 percent |
| PBT: Persistent, Bioaccumulative and Toxic |
| vPvB: very Persistent and very Bioaccumulative |
| NIOSH: National Institute for Occupational Safety |
| OSHA: Occupational Safety & Health |
| TLV: Threshold Limit Value |
| REL: Permissible Exposure Limit |
| Met. Corr. 1: Corrosive to metals – Category 1 |
| Acute Tox. 4: Acute toxicity – Category 4 |
| Skin Corr. 1A: Skin corrosion/irritation – Category 1A |
| Eye Dam. 1: Serious eye damage/eye irritation – Category 1 |
1 Identification

- **Product identifier**
  - **Trade name:** ICP Stock Standard
  - **Article number:** ICP-MS-68A-C

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** High-Purity Standards
    - **Address:** PO Box 41727 Charleston, SC 29423 United States
    - **Telephone:** +1-843-767-7900
    - **Fax:** +1-843-767-7906
    - **Website:** highpuritystandards.com
    - **Email:** info@highpuritystandards.com

- **Information department:** Product safety department
- **Emergency telephone number:** INFOTRAC
  - Emergency telephone numbers: 1-800-535-5053
  - Other emergency telephone numbers: 1-352-323-3500

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS05 Corrosion
  - **Skin Corr. 1A** H314 Causes severe skin burns and eye damage.

- **Label elements**
  - **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**
    - GHS05

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  - hydrochloric acid

- **Hazard statements**
  - H314 Causes severe skin burns and eye damage.

- **Precautionary statements**
  - Do not breathe dusts or mists.
  - Wash thoroughly after handling.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - If swallowed: Rinse mouth. Do NOT induce vomiting.
  - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - 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.

(Contd. on page 2)
Specific treatment (see on this label).
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
  - NFPA ratings (scale 0 - 4)
    - Health = 3
    - Fire = 0
    - Reactivity = 0

- HMIS-ratings (scale 0 - 4)
  - Health = *3
  - Fire = 0
  - Reactivity = 0

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

3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

- Dangerous components:
  - 7647-01-0 hydrochloric acid 2.0%

- Chemical identification of the substance/preparation
  - 7439-88-5 iridium 0.001%
  - 7440-04-2 osmium 0.001%
  - 7440-05-3 palladium 0.001%
  - 7440-06-4 platinum 0.001%
  - 7440-16-6 rhodium 0.001%
  - 7440-18-8 ruthenium 0.001%
  - 7440-57-5 Gold 0.001%
  - 7732-18-5 water, distilled, conductivity or of similar purity 97.993%

4 First-aid measures

- Description of first aid measures
- General information: Immediately remove any clothing soiled by the product.
  - After inhalation: In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact: Immediately wash with water and soap and rinse thoroughly.
  - After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
  - After swallowing: Drink copious amounts of water and provide fresh air. Immediately call a doctor.
5 Fire-fighting measures

- **Extinguishing media**
  - Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
  During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
  - Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - Mount respiratory protective device.
  - Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Use neutralizing agent.
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- **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.
- **Protective Action Criteria for Chemicals**

<table>
<thead>
<tr>
<th>PAC-1:</th>
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</thead>
<tbody>
<tr>
<td>7647-01-0</td>
<td>hydrochloric acid 1.8 ppm</td>
</tr>
<tr>
<td>7439-88-5</td>
<td>iridium 4.7 mg/m³</td>
</tr>
<tr>
<td>7440-04-2</td>
<td>osmium 0.28 mg/m³</td>
</tr>
<tr>
<td>7440-05-3</td>
<td>palladium 6 mg/m³</td>
</tr>
<tr>
<td>7440-06-4</td>
<td>platinum 3 mg/m³</td>
</tr>
<tr>
<td>7440-16-6</td>
<td>rhodium 3 mg/m³</td>
</tr>
<tr>
<td>7440-18-8</td>
<td>ruthenium 30 mg/m³</td>
</tr>
<tr>
<td>7440-57-5</td>
<td>Gold 0.46 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-2:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7647-01-0</td>
<td>hydrochloric acid 22 ppm</td>
</tr>
<tr>
<td>7439-88-5</td>
<td>iridium 51 mg/m³</td>
</tr>
<tr>
<td>7440-04-2</td>
<td>osmium 3.1 mg/m³</td>
</tr>
<tr>
<td>7440-05-3</td>
<td>palladium 66 mg/m³</td>
</tr>
<tr>
<td>7440-06-4</td>
<td>platinum 33 mg/m³</td>
</tr>
</tbody>
</table>
Trade name: ICP Stock Standard

<table>
<thead>
<tr>
<th>Compound</th>
<th>Limit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-16-6 rhodium</td>
<td>33 mg/m³</td>
</tr>
<tr>
<td>7440-18-8 ruthenium</td>
<td>330 mg/m³</td>
</tr>
<tr>
<td>7440-57-5 Gold</td>
<td>5.1 mg/m³</td>
</tr>
<tr>
<td>PAC-3:</td>
<td></td>
</tr>
<tr>
<td>7647-01-0 hydrochloric acid</td>
<td>100 ppm</td>
</tr>
<tr>
<td>7439-88-5 iridium</td>
<td>310 mg/m³</td>
</tr>
<tr>
<td>7440-04-2 osmium</td>
<td>19 mg/m³</td>
</tr>
<tr>
<td>7440-05-3 palladium</td>
<td>400 mg/m³</td>
</tr>
<tr>
<td>7440-06-4 platinum</td>
<td>200 mg/m³</td>
</tr>
<tr>
<td>7440-16-6 rhodium</td>
<td>200 mg/m³</td>
</tr>
<tr>
<td>7440-18-8 ruthenium</td>
<td>2,000 mg/m³</td>
</tr>
<tr>
<td>7440-57-5 Gold</td>
<td>30 mg/m³</td>
</tr>
</tbody>
</table>

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
  - Information about protection against explosions and fires: Keep respiratory protective device available.

- 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 receptacle tightly sealed.

8 Exposure controls/personal protection

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

- Control parameters
  - Components with limit values that require monitoring at the workplace:
    - 7647-01-0 hydrochloric acid
      - PEL Ceiling limit value: 7 mg/m³, 5 ppm
      - REL Ceiling limit value: 7 mg/m³, 5 ppm
      - TLV Ceiling limit value: 2.98 mg/m³, 2 ppm

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

- Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures:
    Keep away from foodstuffs, beverages and feed.
    Immediately remove all soiled and contaminated clothing.
    Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

- **Breathing equipment:**
  In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

- **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**
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **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]

  **9 Physical and chemical properties**

  - **Information on basic physical and chemical properties**
    - **General Information**
      - **Appearance:**
        - Form: Liquid
        - Color: Amber colored
      - **Odor:** Characteristic
    - **Odor threshold:** Not determined.
    - **pH-value:** Not determined.

    - **Change in condition**
      - **Melting point/Melting range:** Undetermined.
      - **Boiling point/Boiling range:** 100 °C (212 °F)
    - **Flash point:** Not applicable.
    - **Flammability (solid, gaseous):** Not applicable.
    - **Decomposition temperature:** Not determined.
    - **Auto igniting:** Product is not selfigniting.
    - **Danger of explosion:** Product does not present an explosion hazard.
Trade name: ICP Stock Standard

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

- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17.3 mm Hg)

- **Density:** Not determined.
  - Relative density: Not determined.
  - Vapor density: Not determined.
  - Evaporation rate: Not determined.

- **Solubility in / Miscibility with Water:** Not miscible or difficult to mix.

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

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

- **Solvent content:**
  - Water: 98.0 %
  - VOC content: 0.00 %
    - 0.0 g/l / 0.00 lb/gal

- **Solids content:** 0.0 %

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

### 10 Stability and reactivity

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

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
  - **LD/LC50 values that are relevant for classification:**
    - 7647-01-0 hydrochloric acid
    - Oral LD50 900 mg/kg (rabbit)
- **Primary irritant effect:**
  - on the skin: Strong caustic effect on skin and mucous membranes.
  - on the eye: Strong caustic effect.
- **Sensitization** No sensitizing effects known.
Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

Carcinogenic categories

IARC (International Agency for Research on Cancer)
- 7647-01-0 hydrochloric acid

NTP (National Toxicology Program)
- None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)
- None of the ingredients is listed.

12 Ecological information

Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Behavior in environmental systems:
- Bioaccumulative potential: No further relevant information available.
- Mobility in soil: No further relevant information available.
- Additional ecological information:
- General notes:
  - Generally not hazardous for water
  - Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

13 Disposal considerations

Waste treatment methods
- Recommendation:
  - Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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

14 Transport information

UN-Number
- DOT, ADR, IMDG, IATA: UN3264
- UN proper shipping name:
  - DOT: Corrosive liquid, acidic, inorganic, n.o.s. (Hydrochloric acid)
Trade name: ICP Stock Standard

| · ADR | 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Hydrochloric acid) |
| · IMDG, IATA | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROCHLORIC ACID) |

| · Transport hazard class(es) |
| · DOT |
| · Class | 8 Corrosive substances |
| · Label | 8 |

| · ADR, IMDG, IATA |
| · Class | 8 Corrosive substances |
| · Label | 8 |

| · Packing group |
| · DOT, ADR, IMDG, IATA | III |

| · Environmental hazards: |
| · Special precautions for user | Warning: Corrosive substances |
| · Danger code (Kemler): | 80 |
| · 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 MARPOL73/78 and the IBC Code | Not applicable. |

| · Transport/Additional information: |
| · DOT |
| · Quantity limitations | On passenger aircraft/rail: 5 L |
| | On cargo aircraft only: 60 L |

| · ADR |
| · Excepted quantities (EQ) | Code: E1 |
| | Maximum net quantity per inner packaging: 30 ml |
| | Maximum net quantity per outer packaging: 1000 ml |

| · IMDG |
| · Limited quantities (LQ) | 5L |
| · Excepted quantities (EQ) | Code: E1 |
| | Maximum net quantity per inner packaging: 30 ml |
| | Maximum net quantity per outer packaging: 1000 ml |
### 15 Regulatory information

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

- **Sara**
  - **Section 355 (extremely hazardous substances):**
    - 7647-01-0 hydrochloric acid
  - **Section 313 (Specific toxic chemical listings):**
    - 7647-01-0 hydrochloric acid
  - **TSCA (Toxic Substances Control Act):**
    - All ingredients are listed.
  - **Proposition 65**
    - **Chemicals known to cause cancer:**
      - None of the ingredients is listed.
    - **Chemicals known to cause reproductive toxicity for females:**
      - None of the ingredients is listed.
    - **Chemicals known to cause reproductive toxicity for males:**
      - None of the ingredients is listed.
    - **Chemicals known to cause developmental toxicity:**
      - None of the ingredients is listed.

- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency) (Substances not listed)**
    - 7647-01-0 hydrochloric acid
    - 7439-88-5 iridium
    - 7440-04-2 osmium
    - 7440-05-3 palladium
    - 7440-06-4 platinum
    - 7440-16-6 rhodium
    - 7440-18-8 ruthenium
    - 7440-57-5 Gold
    - 7732-18-5 water, distilled, conductivity or of similar purity
  - **TLV (Threshold Limit Value established by ACGIH)**
    - 7647-01-0 hydrochloric acid
      - A4
    - 7440-16-6 rhodium
      - A4
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    - None of the ingredients is listed.
  - **GHS label elements**
    - The product is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms

GHS05

Signal word Danger

Hazard-determining components of labeling:
hydrochloric acid

Hazard statements
H314 Causes severe skin burns and eye damage.

Precautionary statements
Do not breathe dusts or mists.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
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.

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

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing SDS: Environment protection department.

Contact:
High-Purity Standards
Tel: 843-767-7900
Fax: 843-767-7906

Date of preparation / last revision 07/30/2019 /

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
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Trade name: ICP Stock Standard

PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin Corr. 1A: Skin corrosion/irritation – Category 1A

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