1 Identification

· Product identifier
  · Trade name: Boron 10,000 µg/mL in 2% NH₄OH
  · Article number: 10M7-7

· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier:
    High-Purity Standards
    PO Box 41727 Charleston, SC 29423 United States
    Telephone: +1-843-767-7900
    Fax: +1-843-767-7906
    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
  GHS07
  Skin Irrit. 2 H315 Causes skin irritation.
  Eye Irrit. 2A H319 Causes serious eye irritation.

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

      GHS07

· Signal word Warning

· Hazard statements
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.

· Precautionary statements
  Wash thoroughly after handling.
  Wear protective gloves / eye protection / face protection.
  If on skin: Wash with plenty of water.
  Specific treatment (see on this label).
  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.
Trade name: Boron 10,000 µg/mL in 2% NH4OH

3 Composition/information on ingredients

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

- Dangerous components:
  - 1336-21-6 Ammonium hydroxide 2.0%
  - 10043-35-3 boric acid 1.0%
  - 7732-18-5 water, distilled, conductivity or of similar purity 97.0%

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. If symptoms persist, consult a doctor.
- After swallowing: If symptoms persist consult doctor.

Information for doctor:
- Most important symptoms and effects, both acute and delayed: No further relevant information available.
- Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture: No further relevant information available.
Trade name: Boron 10,000 µg/mL in 2% NH₄OH

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

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures Not required.
- 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).
- 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:
    | 1336-21-6     | Ammonium hydroxide | 61 ppm |
    | 10043-35-3    | boric acid         | 6 mg/m³ |

  - PAC-2:
    | 1336-21-6     | Ammonium hydroxide | 330 ppm |
    | 10043-35-3    | boric acid         | 23 mg/m³ |

  - PAC-3:
    | 1336-21-6     | Ammonium hydroxide | 2,300 ppm |
    | 10043-35-3    | boric acid         | 830 mg/m³ |

7 Handling and storage

- Handling:
  - Precautions for safe handling No special precautions are necessary if used correctly.
  - Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities
- Storage:
  - Requirements to be met by storerooms and receptacles: No special requirements.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: Keep 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:
    The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
    At this time, the remaining constituent has no known exposure limits.
Trade name: Boron 10,000 µg/mL in 2% NH₄OH

10043-35-3 boric acid

<table>
<thead>
<tr>
<th>TLV</th>
<th>Short-term value: 6* mg/m³</th>
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<tbody>
<tr>
<td></td>
<td>Long-term value: 2* mg/m³</td>
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<tr>
<td>*</td>
<td>as inhalable fraction</td>
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</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 and skin.
- Breathing equipment: Not required.
- 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.


<table>
<thead>
<tr>
<th>· Change in condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point/Melting range:</td>
</tr>
<tr>
<td>Boiling point/Boiling range:</td>
</tr>
</tbody>
</table>

| · 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. |

<table>
<thead>
<tr>
<th>· Explosion limits:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower:</td>
</tr>
<tr>
<td>Upper:</td>
</tr>
</tbody>
</table>

| · Vapor pressure at 20 °C (68 °F): | 23 hPa (17.3 mm Hg) |
| · Density at 20 °C (68 °F): | 1.00215 g/cm³ (8.36294 lbs/gal) |

| · Bulk density: | 993 kg/m³ |
| · 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. |

<table>
<thead>
<tr>
<th>· Solvent content:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water:</td>
</tr>
<tr>
<td>VOC content:</td>
</tr>
<tr>
<td>0.0 g/l / 0.00 lb/gal</td>
</tr>
</tbody>
</table>

| · Solids content: | 1.0 % |
| · Other information | No further relevant information available. |

10 Stability and reactivity

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

- Information on toxicological effects
- Acute toxicity:
  - LD/LC50 values that are relevant for classification:
    10043-35-3 boric acid
      Oral LD50 2,660 mg/kg (rat)
    - Primary irritant effect:
      - on the skin: Irritant to skin and mucous membranes.
      - on the eye: Irritating effect.
    - Sensitization: No sensitizing effects known.
    - Additional toxicological information:
      The product shows the following dangers according to internally approved calculation methods for preparations: Irritant
  - 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.

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:
    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.
  - 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.
Safety Data Sheet  
acc. to OSHA HCS

Trade name: Boron 10,000 µg/mL in 2% NH4OH

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

14 Transport information

| · UN-Number | not regulated |
| · DOT, ADR, IMDG, IATA | not regulated |
| · UN proper shipping name | not regulated |
| · DOT, ADR, IMDG, IATA | not regulated |
| · Transport hazard class(es) | not regulated |
| · DOT, ADR, ADN, IMDG, IATA | not regulated |
| · Class | not regulated |
| · Packing group | not regulated |
| · DOT, ADR, IMDG, IATA | not regulated |
| · Environmental hazards: | Not applicable. |
| · Special precautions for user | Not applicable. |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · UN "Model Regulation": | not regulated |

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture
· Sara
· Section 355 (extremely hazardous substances): None of the ingredients is listed.
· Section 313 (Specific toxic chemical listings):
  1336-21-6 Ammonium hydroxide
· TSCA (Toxic Substances Control Act): All components have the value ACTIVE.
· Hazardous Air Pollutants None of the ingredients is 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.
Safety Data Sheet  
acc. to OSHA HCS

Trade name: Boron 10,000 µg/mL in 2% NH4OH

(Contd. of page 7)

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

- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)**
    | 10043-35-3 | boric acid | I (oral) |
  - **TLV (Threshold Limit Value established by ACGIH)**
    | 10043-35-3 | boric acid | 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**

  ![GHS07]

- **Signal word** Warning
- **Hazard statements**
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
- **Precautionary statements**
  Wash thoroughly after handling.
  Wear protective gloves / eye protection / face protection.
  If on skin: Wash with plenty of water.
  Specific treatment (see on this label).
  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.
- **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** 08/20/2019 / -
- **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

(Contd. on page 9)
Trade name: Boron 10,000 µg/mL in 2% NH4OH

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
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A