1 Identification

- Product identifier
- Trade name: Custom Standard
- Part number: ICUS-4869
- Application of the substance / the mixture: Laboratory chemicals
- Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
  ULTRA Scientific, Inc.
  250 Smith Street
  North Kingstown, RI  02852
  USA
- Information department:
  Telephone: (401) 294-9400
  Fax: (401) 295-2300
  E-mail: regulatory@ultrasci.com
- Emergency telephone number:
  US: (800) 424-9300
  Outside US: (703) 527-3887

2 Hazard(s) identification

- Classification of the substance or mixture
  The product is not classified according to the Globally Harmonized System (GHS).
- Label elements
  - GHS label elements: Void
  - Hazard pictograms: Void
  - Signal word: Void
  - Hazard statements: Void
- Classification system:
  - NFPA ratings (scale 0 - 4)
    Health = 0
    Fire = 0
    Reactivity = 0
  - HMIS-ratings (scale 0 - 4)
    HEALTH 0
    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.
Trade name: Custom Standard

4 First-aid measures

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

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Not required.
- 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).
- 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>
<th>Ethylene diamine</th>
<th>0.88 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>107-15-3</td>
<td>potassium bromate</td>
<td>0.3 mg/m³</td>
</tr>
<tr>
<td>7758-01-2</td>
<td>potassium perchlorate</td>
<td>6.3 mg/m³</td>
</tr>
<tr>
<td>7778-74-7</td>
<td>potassium bromide</td>
<td>9.2 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-2:</th>
<th>Ethylene diamine</th>
<th>9.7 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>107-15-3</td>
<td>potassium bromate</td>
<td>3.1 mg/m³</td>
</tr>
<tr>
<td>7758-01-2</td>
<td>potassium perchlorate</td>
<td>69 mg/m³</td>
</tr>
<tr>
<td>7778-74-7</td>
<td>potassium bromide</td>
<td>100 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-3:</th>
<th>Ethylene diamine</th>
<th>20 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>107-15-3</td>
<td>potassium bromate</td>
<td>89 mg/m³</td>
</tr>
</tbody>
</table>
7 Handling and storage

- Handling:
  - Precautions for safe handling: No special measures required.
- 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: None.
- 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 product does not contain any relevant quantities of materials with critical values that have to be monitored at
    the workplace.
  - Additional information: The lists that were valid during the creation were used as basis.
- General protective and hygienic measures:
  - The usual precautionary measures for handling chemicals should be followed.
- Breathing equipment: 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:
    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: Goggles recommended during refilling.

9 Physical and chemical properties

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

(Contd. of page 4)
### 4.5.2.5

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not determined.</td>
</tr>
<tr>
<td>pH-value</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Change in condition</td>
<td></td>
</tr>
<tr>
<td>Melting point/Melting range</td>
<td>Undetermined.</td>
</tr>
<tr>
<td>Boiling point/Boiling range</td>
<td>100°C (°F)</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flammability (solid, gaseous)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Auto igniting</td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td>Danger of explosion</td>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td>Explosion limits</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Upper</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapor pressure at 20°C (68 °F)</td>
<td>23 hPa (mm Hg)</td>
</tr>
<tr>
<td>Density at 20°C (68 °F):</td>
<td>1 g/cm³ (lbs/gal)</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Solubility in / Miscibility with Water</td>
<td>Not miscible or difficult to mix.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Dynamic at 20°C (68 °F):</td>
<td>0.952 mPas</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Solvent content</td>
<td></td>
</tr>
<tr>
<td>Organic solvents:</td>
<td>0.0 %</td>
</tr>
<tr>
<td>Water</td>
<td>100.0 %</td>
</tr>
<tr>
<td>VOC content</td>
<td>0.01 %</td>
</tr>
<tr>
<td></td>
<td>0.1 g/l / 0.00 lb/gl</td>
</tr>
<tr>
<td>Solids content</td>
<td>0.0 %</td>
</tr>
<tr>
<td>Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

## 10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **Chemical stability**: Not determined.
- **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.
11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
  - Primary irritant effect:
    - on the skin: No irritant effect.
    - on the eye: No irritating effect.
  - Sensitization: No sensitizing effects known.
- Additional toxicological information:
  The product is not subject to classification according to internally approved calculation methods for preparations: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

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
  - 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: Smaller quantities can be disposed of with household waste.
- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.
### 14 Transport information

- **UN-Number**
  - DOT, IMDG, IATA: not regulated

- **DOT, IMDG, IATA**
  - proper shipping name: not regulated

- **Transport hazard class(es)**
  - DOT, IMDG, IATA: not regulated

- **Packing group**
  - DOT, 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):
      - 107-15-3 ethylenediamine
    - Section 313 (Specific toxic chemical listings):
      - 7758-01-2 potassium bromate

- **TSCA (Toxic Substances Control Act):**
  - All ingredients are listed.

- **Proposition 65**
  - Chemicals known to cause cancer:
    - 7758-01-2 potassium bromate

- **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)**
    - 107-15-3 ethylenediamine: D
    - 7758-01-2 potassium bromate: B2, K/L(oral), CBD(inh)
    - 7778-74-7 potassium perchlorate: NL

(Contd. on page 7)
Trade name: Custom Standard

· TLV (Threshold Limit Value established by ACGIH)
  107-15-3 ethylenediamine

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

  · GHS label elements Void
  · Hazard pictograms Void
  · Signal word Void
  · Hazard statements Void
  · 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.

· Date of preparation / last revision 11/03/2017 / -
· 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