1 Identification

- Product identifier
  - Trade name: Custom Standard
  - Part number: ICUS-1414-480ML
  - 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

- Dangerous components: Void

### 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></th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2 nitric acid</td>
<td>0.16 ppm</td>
</tr>
<tr>
<td>10196-18-6 zinc(II) nitrate hexahydrate</td>
<td>27 mg/m³</td>
</tr>
<tr>
<td>7647-01-0 hydrogen chloride</td>
<td>1.8 ppm</td>
</tr>
<tr>
<td>7722-76-1 ammonium dihydrogenorthophosphate</td>
<td>17 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-2:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2 nitric acid</td>
<td>24 ppm</td>
</tr>
<tr>
<td>10196-18-6 zinc(II) nitrate hexahydrate</td>
<td>300 mg/m³</td>
</tr>
<tr>
<td>7647-01-0 hydrogen chloride</td>
<td>22 ppm</td>
</tr>
<tr>
<td>7722-76-1 ammonium dihydrogenorthophosphate</td>
<td>190 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-3:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2 nitric acid</td>
<td>92 ppm</td>
</tr>
<tr>
<td>10196-18-6 zinc(II) nitrate hexahydrate</td>
<td>1,800 mg/m³</td>
</tr>
</tbody>
</table>
Trade name: Custom Standard

7 Handling and storage

- **Handling:** No special measures required.
- **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.

- **Exposure controls**
  - **Personal protective equipment**: The usual precautionary measures for handling chemicals should be followed.
  - **Breathing equipment**: Not required.
  - **Protection of hands**: Not required.
  - **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 breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.
  - **Eye protection**: Goggles recommended during refilling.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  - **General Information**
    - **Appearance**:
      - **Form**: Fluid
      - **Color**: Colorless
      - **Odor**: Odorless
      - **Odor threshold**: Not determined.
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>· <strong>pH-value:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td>· <strong>Change in condition</strong></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 (212 °F)</td>
</tr>
<tr>
<td>· <strong>Flash point:</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td>· <strong>Flammability (solid, gaseous):</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td>· <strong>Decomposition temperature:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td>· <strong>Auto igniting:</strong></td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td>· <strong>Danger of explosion:</strong></td>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td>· <strong>Explosion limits:</strong></td>
<td></td>
</tr>
<tr>
<td>Lower:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Upper:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· <strong>Vapor pressure at 20 °C (68 °F):</strong></td>
<td>23 hPa (17.3 mm Hg)</td>
</tr>
<tr>
<td>· <strong>Density at 20 °C (68 °F):</strong></td>
<td>1.00035 g/cm³ (8.34792 lbs/gal)</td>
</tr>
<tr>
<td>· <strong>Relative density</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td>· <strong>Vapor density</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td>· <strong>Evaporation rate</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td>· <strong>Solubility in / Miscibility with</strong></td>
<td>Not miscible or difficult to mix.</td>
</tr>
<tr>
<td>Water:</td>
<td></td>
</tr>
<tr>
<td>· <strong>Partition coefficient (n-octanol/water):</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td>· <strong>Viscosity:</strong></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>· <strong>Solvent content:</strong></td>
<td></td>
</tr>
<tr>
<td>Water:</td>
<td>99.9 %</td>
</tr>
<tr>
<td>VOC content:</td>
<td>0.00 %</td>
</tr>
<tr>
<td></td>
<td>0.0 g/l / 0.00 lb/gl</td>
</tr>
<tr>
<td>· <strong>Solids content:</strong></td>
<td>0.0 %</td>
</tr>
<tr>
<td>· <strong>Other information</strong></td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

**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: 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.

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    7647-01-0 hydrogen chloride
  - 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
    - 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
### 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
    - 7647-01-0 hydrogen chloride
  - **Section 313 (Specific toxic chemical listings):**
    - 7697-37-2 nitric acid
    - 10196-18-6 zinc(II) nitrate hexahydrate
    - 7647-01-0 hydrogen chloride
  - **TSCA (Toxic Substances Control Act):**
    - 7697-37-2 nitric acid
    - 7647-01-0 hydrogen chloride
    - 7722-76-1 ammonium dihydrogenorthophosphate
    - 7732-18-5 water
  - **TSCA new (21st Century Act) (Substances not 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.

(Contd. on page 7)
46.0.5 Carcinogenic categories

- EPA (Environmental Protection Agency)
  None of the ingredients is listed.

- TLV (Threshold Limit Value established by ACGIH)
  7647-01-0 hydrogen chloride [A4]

- 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 12/18/2017 / -

- 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