1 Identification

· Product identifier
· Trade name: Custom Standard
· Part number: ICUS-7207
· 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

🚨 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
  Causes skin irritation.
  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.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  Specific treatment (see on this label).
  If skin irritation occurs: Get medical advice/attention.
  If eye irritation persists: Get medical advice/attention.
  Take off contaminated clothing and wash it before reuse.

(Contd. on page 2)
Trade name: Custom Standard

- Classification system:
  - NFPA ratings (scale 0 - 4)
    - Health = 1
    - Fire = 0
    - Reactivity = 0
  - HMIS-ratings (scale 0 - 4)
    - Health = 1
    - 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>1.98%</td>
</tr>
</tbody>
</table>

4 First-aid measures

- Description of first aid measures
  - After inhalation: In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact: Immediately wash with water and soap and rinse thoroughly.
  - After eye contact:
    - Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - After swallowing:
    - 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: 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**

<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>7783-34-8 mercuric nitrate monohydrate</td>
<td>0.13 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>7783-34-8 mercuric nitrate monohydrate</td>
<td>0.17 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>7783-34-8 mercuric nitrate monohydrate</td>
<td>48 mg/m³</td>
</tr>
</tbody>
</table>

**7 Handling and storage**

<table>
<thead>
<tr>
<th>Handling:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Precautions for safe handling</strong></td>
<td>No special precautions are necessary if used correctly.</td>
</tr>
<tr>
<td><strong>Information about protection against explosions and fires:</strong></td>
<td>No special measures required.</td>
</tr>
</tbody>
</table>

| 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: |           |

| 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 |
| TLV  | Short-term value: 10 mg/m³, 4 ppm |
| Long-term value: 5.2 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.
Trade name: Custom Standard

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: Fluid
    - Color: Colorless
    - Odor: Odorless
    - Odor threshold: Not determined.
  - **pH-value:** Not determined.
  - **Change in condition**
    - Melting point/Melting range: 0°C (°F)
    - Boiling point/Boiling range: 100°C (°F)
  - **Flash point:** Not applicable.
  - **Flammability (solid, gaseous):** Not applicable.
  - **Ignition temperature:**
    - 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.
Trade name: Custom Standard

- Vapor pressure at 20°C (68 °F): 23 hPa (mm Hg)
- Density at 20°C (68 °F): 1.00637 g/cm³ (lbs/gal)
- 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 at 20°C (68 °F): 0.952 mPas
  Kinematic: Not determined.
- Solvent content: Water: 98.0 %
  VOC content: 0.00 %
  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:
  - ATE (Acute Toxicity Estimate)
    Inhalative LC50/4 h 3,384 mg/L (rat)
  - 7697-37-2 nitric acid
    Inhalative LC50/4 h 67 mg/L (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
45.2.5

· Carcinogenic categories

<table>
<thead>
<tr>
<th>IARC (International Agency for Research on Cancer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7783-34-8 mercuric nitrate monohydrate</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>NTP (National Toxicology Program)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OSHA-Ca (Occupational Safety &amp; Health Administration)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
</tbody>
</table>

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.

· Uncleaned packagings:

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

14 Transport information

· UN-Number

· DOT, IMDG, IATA: UN3264

· UN proper shipping name

· DOT: Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)

· IMDG, IATA: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
Trade name: Custom Standard

<table>
<thead>
<tr>
<th>· Transport hazard class(es)</th>
</tr>
</thead>
<tbody>
<tr>
<td>· DOT</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>· IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>· Class</td>
</tr>
<tr>
<td>8 Corrosive substances</td>
</tr>
<tr>
<td>· Label</td>
</tr>
<tr>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Packing group</th>
</tr>
</thead>
<tbody>
<tr>
<td>· DOT, IMDG, IATA</td>
</tr>
<tr>
<td>III</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Environmental hazards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Special precautions for user</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warning: Corrosive substances</td>
</tr>
<tr>
<td>· Danger code (Kemler):</td>
</tr>
<tr>
<td>80</td>
</tr>
<tr>
<td>· EMS Number:</td>
</tr>
<tr>
<td>F-A.S-B</td>
</tr>
<tr>
<td>· Segregation groups</td>
</tr>
<tr>
<td>Acids</td>
</tr>
<tr>
<td>· Stowage Category</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>· Stowage Code</td>
</tr>
<tr>
<td>SW2 Clear of living quarters.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Transport/Additional information:</th>
</tr>
</thead>
<tbody>
<tr>
<td>· DOT</td>
</tr>
<tr>
<td>· Quantity limitations</td>
</tr>
<tr>
<td>On passenger aircraft/rail: 5 L</td>
</tr>
<tr>
<td>On cargo aircraft only: 60 L</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· IMDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Limited quantities (LQ)</td>
</tr>
<tr>
<td>5L</td>
</tr>
<tr>
<td>· Excepted quantities (EQ)</td>
</tr>
<tr>
<td>Code: E1</td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging: 1000 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· UN &quot;Model Regulation&quot;:</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), 8, III</td>
</tr>
</tbody>
</table>

## 15 Regulatory information

<table>
<thead>
<tr>
<th>· Safety, health and environmental regulations/legislation specific for the substance or mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Sara</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Section 355 (extremely hazardous substances):</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2 nitric acid</td>
</tr>
</tbody>
</table>


Trade name: Custom Standard

- **Section 313 (Specific toxic chemical listings):**
  - 7697-37-2 nitric acid
  - 7783-34-8 mercuric nitrate monohydrate

- **TSCA (Toxic Substances Control Act):**
  - 7697-37-2 nitric acid
  - 7732-18-5 water

- **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:**
    7783-34-8 mercuric nitrate monohydrate

- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)**
    7783-34-8 mercuric nitrate monohydrate D
  - **TLV (Threshold Limit Value established by ACGIH)**
    7783-34-8 mercuric nitrate monohydrate 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**
  - Causes skin irritation.
  - 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.
  - IF in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - Specific treatment (see on this label).
  - If skin irritation occurs: Get medical advice/attention.
  - If eye irritation persists: Get medical advice/attention.
  - Take off contaminated clothing and wash it before reuse.
- **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 08/16/2017 / -

· 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)
  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