MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>HMIS</th>
<th>Personal Protective Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td><img src="3" alt="Health Hazard" /></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td><img src="1" alt="Fire Hazard" /></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td><img src="0" alt="Reactivity" /></td>
</tr>
</tbody>
</table>

**Product code:** PM833

**Product Name:** YTTRIUM PLASMA EMISSION STANDARD, 1 ML = 10 MG Y

**Chemical Name:** No information available

**Synonyms:** No information available

**Recommended use:** No information available.

**CAS #:** Mixture

**Formula:** Not applicable

**RTECS #** Not available

**Ci#:** Not available

**Supplier:** Spectrum Chemicals and Laboratory Products, Inc.
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

**Emergency Telephone Number:** CHEMTREC: 1-800-424-9300

**Contact Person:**
- Martin LaBenz (West Coast)
- Chris Terpak (East Coast)

2. HAZARDS IDENTIFICATION

**ODOR:** None

**PHYSICAL STATE:** Liquid.

**APPEARANCE:** No information available

**COLOR:** Clear. Colorless.

**OSHA Regulatory Status** This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

**EMERGENCY OVERVIEW**

DANGER CORROSIVE! The product causes burns of eyes, skin and mucous membranes.
2. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

Principal Routes of Exposure:
Skin. Inhalation. Ingestion.

Acute Potential Health Effects:

Skin Contact:
Extremely irritating to the skin. Causes skin burns. It may be absorbed through the skin.

Eye Contact:
Severe eye irritation. Causes eye burns.

Inhalation:
Irritating to respiratory system. May affect respiration. May cause pulmonary edema. It may cause chemical burns of the respiratory tract.

Ingestion:
Causes burns. Can burn mouth, throat, and stomach.

Chronic Potential Health Effects:

Carcinogen Status: No information available
Mutagenic Effects: No information available
Teratogenic Effects: No information available
Aggravated Medical Conditions: No information available

See Section 11 for additional Toxicological Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>93-95.4</td>
</tr>
<tr>
<td>Nitric acid</td>
<td>7697-37-2</td>
<td>4.5-5.5</td>
</tr>
<tr>
<td>Yttrium Oxide</td>
<td>1314-36-9</td>
<td>0.1-1.5</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

General Advice: Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

Product code: PM833
Product name: YTTRIUM PLASMA
EMISSION STANDARD, 1 ML = 10 MG

Y
Skin Contact: Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician immediately.

Eye Contact: Flush eye with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. Call a physician immediately.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Notes to Physician: Treat symptomatically

5. FIRE-FIGHTING MEASURES

Flammable Properties

<table>
<thead>
<tr>
<th>Flashpoint (°C/°F):</th>
<th>The product is not flammable</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Tested according to:</th>
<th>Not applicable</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Lower Explosion Limit (%):</th>
<th>No information available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Explosion Limit (%):</td>
<td>No information available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Autoignition Temperature (°C/°F):</th>
<th>No information available</th>
</tr>
</thead>
</table>

Suitable Extinguishing Media: Not applicable.

Unsuitable Extinguishing Media: Not applicable.

Hazardous Combustion Products: Nitrogen oxides; acid fumes

Specific hazards: The substance itself does not burn, but may decompose upon heating. When heated to decomposition it may produce corrosive and/or toxic fumes. Contact with metals may evolve flammable hydrogen gas.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Specific Methods: No information available.

6. ACCIDENTAL RELEASE MEASURES

Product code: PM833

Product name: YTTRIUM PLASMA

EMISSION STANDARD, 1 ML = 10 MG

Y
**Personal Precautions:**
Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Remove all sources of ignition.

**Environmental Precautions:**
Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not let product enter drains. Do not flush into surface water or sanitary sewer system. Prevent entry into waterways, sewers, basements or confined areas.

**Methods for Cleaning Up:**
Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. Do not use combustible materials such as paper towels, sawdust, clothing, etc. to clean up spill. Neutralize the residue with a dilute solution of sodium carbonate. Clean contaminated surface thoroughly.

### 7. HANDLING AND STORAGE

**Handling**

**Technical Measures/Precautions:**
Use only in area provided with appropriate exhaust ventilation. Keep away from incompatible materials.

**Safe Handling Advice:**
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Do not ingest. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

**Storage**

**Technical Measures/Storage Conditions:**
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store in a segregated and approved area. Store away from incompatible materials.

**Incompatible Products:**

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering measures to reduce exposure:**
Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

**Personal Protective Equipment**

**Eye protection:** Face-shield.

**Skin and body protection:** Chemical resistant protective suit. Gloves.

**Product code:** PM833

**Product name:** YTTRIUM PLASMA

EMISSION STANDARD, 1 ML = 10 MG

Y
Respiratory protection: Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Respiratory protection is not necessary for normal handling. Good room ventilation or use of local exhaust (fume hood) is sufficient. Use a vapor respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentrations of mist or vapor, inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

National occupational exposure limits

United States
U.S Occupational Exposure Limits: Not determined

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid - 7697-37-2</td>
<td>2 ppm TWA</td>
<td>2 ppm TWA</td>
<td>4 ppm STEL</td>
<td>No information available</td>
</tr>
<tr>
<td></td>
<td>5 mg/m³ TWA</td>
<td>5 mg/m³ TWA</td>
<td>2 ppm TWA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 ppm STEL</td>
<td>10 mg/m³ STEL</td>
<td>2 ppm TWA</td>
<td></td>
</tr>
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</table>

Canada
Canada Occupational Exposure Limits: Not determined

<table>
<thead>
<tr>
<th>Components</th>
<th>Alberta</th>
<th>British Columbia</th>
<th>Quebec</th>
<th>Ontario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid 7697-37-2</td>
<td>2 ppm TWA</td>
<td>2 ppm TWA</td>
<td>2 ppm TWAEV</td>
<td>2 TWAEV</td>
</tr>
<tr>
<td></td>
<td>5.2 mg/m³ TWA</td>
<td>4 ppm STEL</td>
<td>5.2 mg/m³ TWAEV</td>
<td>5 TWAEV</td>
</tr>
<tr>
<td></td>
<td>10 mg/m³ STEL</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Australia and Mexico
Occupational Exposure Limits for Australia and Mexico: Not determined

<table>
<thead>
<tr>
<th>Components</th>
<th>Australia</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid 7697-37-2</td>
<td>4 ppm STEL</td>
<td>2 ppm TWA</td>
</tr>
<tr>
<td></td>
<td>10 mg/m³ STEL</td>
<td>5 mg/m³ TWA</td>
</tr>
<tr>
<td></td>
<td>2 ppm TWA</td>
<td>4 ppm STEL</td>
</tr>
<tr>
<td></td>
<td>5.2 mg/m³ TWA</td>
<td>10 mg/m³ STEL</td>
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</tbody>
</table>

9. PHYSICAL AND CHEMICAL PROPERTIES
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical state:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid.</td>
</tr>
<tr>
<td><strong>Appearance:</strong></td>
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<tr>
<td>No information available</td>
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<tr>
<td><strong>Color:</strong></td>
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<tr>
<td>Clear. Colorless.</td>
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<tr>
<td><strong>Odor:</strong></td>
</tr>
<tr>
<td>None.</td>
</tr>
<tr>
<td><strong>Flash point (°C):</strong></td>
</tr>
<tr>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Conditions to avoid:</strong></td>
</tr>
<tr>
<td>Heat. Incompatible materials.</td>
</tr>
<tr>
<td><strong>Materials to avoid:</strong></td>
</tr>
<tr>
<td><strong>Hazardous decomposition products:</strong></td>
</tr>
<tr>
<td>When heated to decomposition it emits toxic fumes. Nitrogen oxides (NOx).</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

| Stability: | Stable at normal conditions |
| Conditions to avoid: | Heat. Incompatible materials. |
| **Materials to avoid:** |

**Product code:** PM833
**Product name:** YTTRIUM PLASMA
**EMISSION STANDARD, 1 ML = 10 MG**

Y
Possibility of Hazardous Reactions:
For Nitric Acid:
Reacts explosively with metallic powders, carbides, cyanides, sulfides, bases (alkalies), turpentine
Can react explosively with many reducing agents
Arsine, phosphine, tetraborane can oxidize explosively in the presence of Nitric acid
Cesium, and Rubidium acetylides can explode on contact with Nitric acid
Explosive reaction can occur with Nitric acid + Nitrobenzene + Water
Nitric Acid + 4-Methylcyclohexane can react explosively

Polymerization:
Hazardous polymerisation does not occur

Corrosivity:
No corrosive effect on 304 Stainless Steel. No corrosive effect on 316 Stainless Steel. No corrosive effect on Aluminum. No corrosive effect on Bronze. Severe corrosive effect on Copper. Severe corrosive effect on Brass.

Special Remarks on Corrosivity:
No information available

11. TOXICOLOGICAL INFORMATION
Acute Toxicity

Component Information

Water - 7732-18-5
\[
\begin{align*}
\text{LD50/oral/rat} & = > 90 \text{ mL/kg} \text{ Oral LD50 Rat} \\
\text{LD50/oral/mouse} & = \text{No information available} \\
\text{LD50/dermal/rabbit} & = \text{Not determined} \\
\text{LD50/dermal/rat} & = \text{No information available} \\
\text{LC50/inhalation/rat} & = \text{No information available} \\
\text{LC50/inhalation/mouse} & = \text{No information available} \\
\text{Other LD50 information} & = \text{No information available}
\end{align*}
\]

Nitric acid - 7697-37-2
\[
\begin{align*}
\text{LD50/oral/rat} & = \text{No information available} \\
\text{LD50/oral/mouse} & = \text{No information available} \\
\text{LD50/dermal/rabbit} & = \text{Not determined} \\
\text{LD50/dermal/rat} & = \text{No information available} \\
\text{LC50/inhalation/rat} & = 130 \text{ mg/m}^3 \text{ Inhalation LC50 Rat 4 h} \\
& = 7 \text{ mg/L Inhalation LC50 Rat 1 h} \\
\text{LC50/inhalation/mouse} & = \text{No information available} \\
\text{Other LD50 information} & = \text{No information available}
\end{align*}
\]

Yttrium Oxide - 1314-36-9
\[
\begin{align*}
\text{LD50/oral/rat} & = \text{No information available} \\
\text{LD50/oral/mouse} & = \text{No information available} \\
\text{LD50/dermal/rabbit} & = \text{Not determined} \\
\text{LD50/dermal/rat} & = \text{No information available} \\
\text{LC50/inhalation/rat} & = \text{No information available} \\
\text{LC50/inhalation/mouse} & = \text{No information available} \\
\text{Other LD50 information} & = \text{No information available}
\end{align*}
\]

Product Information

Product code: PM833
Product name: YTTRIUM PLASMA
EMISSION STANDARD, 1 ML = 10 MG
Local Effects

**Skin irritation:** Severe skin irritation. Causes burns. May cause a yellow to brownish discoloration of the skin.

**Eye irritation:** Severe eye irritation. Causes burns. May cause irreversible eye damage.

**Inhalation:** Irritating to respiratory system. May cause chemical burns to the respiratory tract. Symptoms may include burning sensation in the nose and throat, coughing, wheezing, shortness of breath and possibly pulmonary edema. May cause headache. May cause decreased appetite and weight loss.

**Ingestion:** Causes digestive or gastrointestinal tract burns. Ingestion may cause nausea, vomiting. May cause abdominal pain.

**Sensitization:** No information available

Chronic Toxicity

**Chronic Toxicity**

Prolonged or repeated inhalation may produce changed in pulmonary function and/or chronic bronchitis. Prolonged or repeated inhalation may affect the urinary system (kidney failure, decreased urinary output after several hours of uncorrected circulatory collapse). Prolonged or repeated exposure may cause discoloration and/or erosion of the teeth (dental enamel). Eye irritation and respiratory symptoms resembling those of frequent upper respiratory viral infections have been associated with chronic Nitric acid exposure. Repeated or prolonged inhalation may affect behavior/central nervous system (headache, vertigo, drowsiness, weakness, loss of coordination, muscle contraction or spasticity, mental confusion).

**Carcinogenic effects:** Not considered carcinogenic

**Mutagenic Effects:** No information available

**Reproductive Effects:** Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse reproductive effects based on animal test data. (Nitric acid).

**Teratogenic Effects:** No information available

**Target Organs:** Lungs. Respiratory System. Skin. Eyes. Teeth.

12. ECOLOGICAL INFORMATION

**ECOTOXICITY**

**Toxicity to terrestrial and aquatic plants and animals:** Information given is based on data on the components and the ecotoxicology of similar products

**Ecotoxicity effects:** Aquatic environment

**Product code:** PM833  **Product name:** YTTRIUM PLASMA

EMISSION STANDARD, 1 ML = 10 MG
Aquatic toxicity:

_Nitric acid - 7697-37-2_

**Freshwater Fish Species Data:** 72 mg/L LC50 Gambusia affinis 96 h

**Mobility:** No information available

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available

### 13. DISPOSAL CONSIDERATIONS

**Waste from residues / unused products:**
Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**
Empty containers should be taken for local recycling, recovery or waste disposal

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Nitric acid</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Yttrium Oxide</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

### 14. TRANSPORT INFORMATION

**DOT**

- **UN-No:** UN2031
- **Proper Shipping Name:** Nitric Acid Solution
- **Hazard Class:** 8
- **Packing Group:** II
- **Subsidiary Risk:** Not applicable
- **Marine Pollutant:** No data available
- **ERG No:** 154
- **DOT RQ (lbs):** No information available

**TDG (Canada)**

- **Proper Shipping Name:** Nitric Acid Solution
- **UN-No:** UN2031
- **Hazard Class:** 8
- **Packing Group:** II
- **Subsidiary Risk:** No information available
- **Description:** No information available

**ADR**

- **Proper Shipping Name:** Nitric Acid Solution
- **UN-No:** UN2031
- **Hazard Class:** 8
- **Packing Group:** II
- **Subsidiary Risk:** No information available
- **Classification Code:** No information available
- **Description:** No information available

**IMO / IMDG**

- **Proper Shipping Name:** Nitric Acid Solution

**Product code:** PM833

Product name: YTTRIUM PLASMA

EMISSION STANDARD, 1 ML = 10 MG
UN-No: UN2031
Hazard Class: 8
Subsidiary Risk: 5.1
Packing Group: II
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-A
MFAG: No information available
Maximum Quantity: No information available

RID
Proper Shipping Name: Nitric Acid Solution
UN-No: UN2031
Hazard Class: 8
Packing Group: II
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available

ICAO
UN-No: UN2031
Hazard Class: 8
Proper Shipping Name: Nitric Acid Solution
Packing Group: II
Subsidiary Risk: No information available
Description: No information available

IATA
Proper Shipping Name: Nitric Acid Solution
UN-No: UN2031
Hazard Class: 8
Packing Group: II
Subsidiary Risk: No information available
ERG Code: 8L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>Philippines (PICCS)</th>
<th>KOREA KECL</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>Present</td>
<td>Present</td>
<td>KE-35400</td>
<td>Not present</td>
<td>Present</td>
<td>Present</td>
<td>231-791-2</td>
</tr>
<tr>
<td>Nitric acid</td>
<td>Present</td>
<td>Present</td>
<td>KE-25911</td>
<td>1-394</td>
<td>Present</td>
<td>Present</td>
<td>231-714-2</td>
</tr>
<tr>
<td>Yttrium Oxide</td>
<td>Present</td>
<td>Present</td>
<td>KE-35504</td>
<td>1-560</td>
<td>Present</td>
<td>Present</td>
<td>215-233-5</td>
</tr>
</tbody>
</table>

U.S. Regulations

Nitric acid
- Massachusetts RTK: Present
- Massachusetts EHS: extraordinarily hazardous
- New Jersey RTK Hazard Substance: Present
- New Jersey (EHS) List: Present
- New Jersey - Discharge Prevention - List of Hazardous Substances: Present
- New Jersey TCPA - EHS: 450lbTQ
- 15000lbTQ

Product code: PM833
Product name: YTTRIUM PLASMA
EMISSION STANDARD, 1 ML = 10 MG Y
**Nitric acid**

Pennsylvania RTK: Environmental hazard  
Pennsylvania RTK - Environmental Hazard List: Present  
RI RTK - Hazardous Substances List: Present  
Michigan PSM HHC: = 500 lb TQ 94.5% by weight or greater  
Minnesota - Hazardous Substance List: Present  
New York Release Reporting - List of Hazardous Substances:  
1000 lb RQ  
100 lb RQ  
California Directors List of Hazardous Substances: Present


**Chemicals Known to the State of California to Cause Cancer:**  
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**  
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
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</tr>
<tr>
<td>Nitric acid</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Yttrium Oxide</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

**CERCLA/SARA**

<table>
<thead>
<tr>
<th>Components</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Nitric acid</td>
<td>1000 lb final RQ</td>
<td>1000 lb TPQ</td>
<td>None</td>
<td>None</td>
<td>1.0 % de minimis concentration</td>
</tr>
<tr>
<td>Yttrium Oxide</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

**U.S. TSCA**

<table>
<thead>
<tr>
<th>Components</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>Not Applicable</td>
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</tr>
<tr>
<td>Nitric acid</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Yttrium Oxide</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

**Canada**

WHMIS hazard class:  
E Corrosive material  

Water  
Uncontrolled product according to WHMIS classification criteria  

Nitric acid  
C E including 61.3%, 67.18%, 70%  
E 0.63%, 6.3%

Canada Controlled Products Regulation:  
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

<table>
<thead>
<tr>
<th>Components</th>
<th>WHMIS Ingredient Disclosure List -</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid</td>
<td>1 %</td>
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Inventory

<table>
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<tr>
<th>Components</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>Present</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Nitric acid</td>
<td>Present</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Yttrium Oxide</td>
<td>Present</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

EU Classification

**R -phrase(s)**
R34 - Causes burns.

**S -phrase(s)**
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**
C - Corrosive.

**16. OTHER INFORMATION**

The MSDS format complies with ANSI Z400.1-2004 standards.

**Preparation Date:** 07-Dec-2010

**Reason for revision:** Not applicable

**Prepared by:** Sonia Owen

**Literature reference:** No information available

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. The physical properties reported in this MSDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.