MATERIALS SAFETY DATA SHEET

Phone No.: 520-294-5201  SASOL North America, Inc. - Ceralox Division
Date: 10-10-87  7800 South Kolb Road
Date Revised: 11-27-02  Tucson, Arizona 85706
Emergency No.: 520-294-5203

COMMON NAME: Alumina, Aluminum Oxide, High Purity
Chemical Family: Metal Oxide
D.O.T. Shipping Name, Hazard Class, I.D. Number: Not Regulated

SECTION I: MATERIAL DESCRIPTION

Chemical name and formula: Aluminum oxide, Al₂O₃
Other designation: Ceralox High Purity Alumina – SPA-GSD12, SPA-GSD, SPA-RTP-SB, APA-RTP-SB, HPA-0.5RTP-A, AHPA
Composition: 99.9+% aluminum oxide combined with a high purity non-toxic organic binder,
Non aluminum oxide impurities: Total less than 5%
CAS No.: 1344-28-1
Manufacturer: Sasol North America, Inc. - Ceralox Division

SECTION II: PHYSICAL AND CHEMICAL DATA

Physical Form: Powder, White, Odorless
Boiling Point: 2977°C
Melting Point: 2050°C
Vapor Pressure: 1 mm at 2158°C
Evaporation Rate: Not Applicable
Chemical Reactivity: Not Applicable
Water Solubility: Insoluble
Specific Gravity: 3.2-3.9+ g/cc

SECTION III: FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not Applicable
Auto-ignition Temperature: Not Applicable
Flammable Limits: Lower, Upper Not Applicable
Extinguishing Media: Not Applicable
Special Firefighting Procedure: Not Applicable
Explosive Potential: Not Applicable

SECTION IV: REACTIVITY DATA

Not reactive with: Air, water, heat, oxidizers and non-corrosive
**SECTION V: HEALTH HAZARD AND FIRST AID**

**Inhalation:** Excessive exposure may cause cough, mucus production, shortness of breath. Remove victim to fresh air immediately. Obtain medical attention if breathing difficulty persists beyond 15 minutes.

**Ingestion:** This material is not expected to be an ingestion hazard; no known human or animal health effects data.

**Eye Contact:** May cause minor eye irritation. Rinse eyes with clean water for 20-30 minutes, retract eyelids often. Obtain emergency medical attention if pain, blinking, tears or redness persist.

**Skin Contact:** This material is not expected to be a skin irritant; no known human or animal health effects data.

**Other Health Hazards:** Except for the effects of airborne dust which is irritating to the eyes and mucus membranes, chronic exposure to this material is not expected to have any adverse health hazards.

**SECTION VI: SPILL LEAK AND DISPOSAL PROCEDURES**

**Product Clean-Up:** Scoop up material.

**Disposal:** Disposal should be in accordance with all applicable local, state, and federal laws and regulations. Disposal by elementary neutralization is recommended. Consult your attorney or appropriate regulatory officials for information regarding disposal requirements. Not a designated RCRA hazardous waste.

**SECTION VII: OCCUPATIONAL EXPOSURE LIMITS**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Source</th>
<th>Date</th>
<th>Type</th>
<th>Value/Units</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuisance Dust (Total Dust)</td>
<td>OSHA</td>
<td>1971</td>
<td>PEL</td>
<td>15 mg/m³</td>
<td>8 hours</td>
</tr>
<tr>
<td>Nuisance Dust (Respirable Fraction)</td>
<td>OSHA</td>
<td>1971</td>
<td>PEL</td>
<td>5 mg/m³</td>
<td>8 hours</td>
</tr>
<tr>
<td>Nuisance Dust (Total Dust)</td>
<td>ACGIH</td>
<td>1985</td>
<td>TLV</td>
<td>10 mg/m³</td>
<td>8 hours</td>
</tr>
<tr>
<td>Nuisance Dust (Respirable Fraction)</td>
<td>ACGIH</td>
<td>1985</td>
<td>TLV</td>
<td>5 mg/m³</td>
<td>8 hours</td>
</tr>
</tbody>
</table>

**SECTION VIII: PROTECTIVE MEASURES AND PRECAUTIONS**

If exposure exceeds the PEL/TLV for nuisance particulate, use NIOSH/MSHA approved respiratory protection equipment. Dust service goggles should be worn to prevent eye contact with airborne particles which may be associated with this product. If handling this material results in dust generation, special ventilation may be required to avoid exposure standards for nuisance dust (see Section VII).

The information in this Material Safety Data Sheet was obtained from sources which are believed to be reliable. However, the information is provided without any warranty, express or implied, regard the correctness.