1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION:

Product Name: Sapphire
Date of Prep: June 4, 2009

2. COMPOSITION/INFORMATION ON INGREDIENTS:

<table>
<thead>
<tr>
<th>CHEMICAL INGREDIENT NAME</th>
<th>CAS NUMBER</th>
<th>EC NUMBER</th>
<th>% BY WT.</th>
<th>OSHA</th>
<th>ACGIH</th>
<th>HAZARD SYMBOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminum oxide</td>
<td>1344-28-1</td>
<td>2156916</td>
<td>99+</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION: No data available.

4. FIRST AID MEASURES:

Inhalation: Remove to fresh air.
Skin Contact: Wash with soap and water.
Eye Contact: Immediately flush with water for a minimum of 15 minutes.
Ingestion: Get medical attention.

Note to physician:

5. FIRE-FIGHTING MEASURES:

Flammable Properties: No data available.
Extinguishing Media: Water spray, carbon dioxide, dry chemical.
Unique Aspects Contributing To a Fire:
Special Fire Fighting Procedures:
   Note: As in any fire, wear a self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES: Sweep up, place in bag and hold for waste disposal.

7. HANDLING AND STORAGE:

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

Handle in accordance with good laboratory practices.

Respiratory Protection: Not normally needed. If exposure limits are exceeded, use approved respirator.
Eye Protection: Safety glasses with side shields.
Skin Protection: Neoprene or other chemical resistant gloves. Disposable nitrile is acceptable for light, intermittent exposure.
Engineering Controls: No special requirements. Handle in an area with good general room ventilation.
9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance:
- Physical State: Solid
- Flash Point: N/A
- Vapor Pressure: 1 mm Hg @ 2158°C
- Vapor Density (air=1): N/A
- Solubility in Water: Insoluble
- Melting Point: 2030°C
- Specific Gravity: 4 g/ml
- Boiling Point: 2980°C
- Odor: N/A
- Explosion Limits: N/A
- pH: 9.4-10.1

10. STABILITY AND REACTIVITY:

- Hazardous Polymerization: Will Not Occur
- Stability: Stable

11. TOXICOLOGICAL INFORMATION:

Primary Route(s) of Exposure Under Normal Use:
- Target Organ(s): Lungs, bones.

Acute Effects: Not available.

Chronic Effects: Coughing, chest pains, difficulty in breathing.

Other Information: Chemical ingredient(s) not classified as carcinogen(s) by OSHA, IARC, NTP, ACGIH or California. ACGIH rating: A4.

12. ECOLOGICAL INFORMATION: No data available.

13. DISPOSAL CONSIDERATIONS: No data available.

14. TRANSPORT INFORMATION:

- U.S. DOT: Shipping Name: None.
- Hazard Class: Non-hazardous for transport
- UN/NA #: Non-hazardous for transport
- Packing Group #: Non-hazardous for air transport.

- IATA/ICAO: Non-hazardous for air transport.

15. REGULATORY INFORMATION:

- U.S. TOSCA: Yes.

- Canada: This product has been classified according to the hazard criteria of the CPR and this MSDS contains all of the information required by the CPR.

16. OTHER INFORMATION:

- U.S. EPA SARA:
  - 313 Chemicals: Yes
  - CERCLA RQ: Yes

- National Fire Protection Association Rating
  - 4= Severe Hazard
  - 3= Serious Hazard
  - 2= Moderate Hazard
  - 1= Slight Hazard
  - 0= Minimal Hazard
  - HEALTH
  - FLAMMABILITY
  - REACTIVITY
  - OTHER

Notes: Not Established (NE) means a value has not been set or there is no information available. Not Applicable (NA) means that the topic is not pertinent.

The information contained herein has been compiled from data presented in various technical sources believed to be accurate. Waters makes no warranties and assumes no liability in connection with the use of this information. It is the user’s responsibility to determine the suitability of this information and to assure the adoption of necessary precautions.