



# MATERIAL SAFETY DATA SHEET

<b>SECTION 1. Chemical Product and Company Identification</b>			
<b>Product Name:</b>	Zirconia Toughened Alumina	<b>Chemical Name:</b>	Zr-Al <sub>2</sub> O <sub>3</sub>
<b>Supplier:</b>	Superior Technical Ceramics Corp. 600 Industrial Park Road St. Albans, VT 05478 (802) 527-7726 phone (802) 527-1181 fax	<b><u>In Case of Emergency Call:</u></b>  (802) 527-7726	
<b>Synonym:</b>	ZTA		
<b>Material Use:</b>	Technical ceramic components.		
<b>Date Prepared:</b>	June 23, 2009		
<b>Prepared By:</b>	Janna L. Bevins/Brian H. Gold		

<b>SECTION 2. Composition, Information or Ingredients</b>			
NAME:	CAS#:	% BY WEIGHT	COMMENTS:
Aluminum Oxide	1344-28-1	60-95	10 mg/m <sup>3</sup> TWA matter containing <1% crystalline silica.
Zirconium Oxide	1314-23-4	Balance	5 mg/m <sup>3</sup> TLV and OSHA PEL

<b>SECTION 3. Hazards Identification</b>			
<b>Emergency Overview:</b>			
Production poses dust or machining swarf that may cause irritation to eyes, nose, throat, and/or skin.			
Health Rating:	Flammability Rating:	Reactivity Rating:	Contact Rating:
2 – Moderate	0 – None	0 – None	2 – Moderate
<b>Lab Protective Equipment:</b>	Eye protection and proper dust collection if machining occurs.		
<b>Storage Color Code:</b>	Green (General Storage)		
<b>Potential Health Effects:</b>			
<b>Inhalation:</b>	Hazard is principally that of a nuisance dust only as a byproduct of machining. Coughing or shortness of breath may occur in cases of excessive inhalation.		
<b>Ingestion:</b>	No adverse effects expected.		
<b>Skin Contact:</b>	No adverse effects expected but dust may cause irritation.		
<b>Eye Contact:</b>	No adverse effects expected but dust may cause irritation.		
<b>Chronic Exposure:</b>	Chronic exposure to dust may lead to pneumoconiosis.		
<b>Aggravation of Pre-existing Conditions:</b>	Not expected to be a health hazard.		



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<b>SECTION 4. First Aid Measures</b>	
<b>Inhalation:</b>	Move to fresh air and consult with local medical personnel if discomfort persists.
<b>Ingestion:</b>	Administer water to dilute, but not if person is unconscious. Consult with local medical personnel if discomfort persists.
<b>Eye Contact:</b>	Flush with tepid water for a minimum of 15 minutes and consult with local medical personnel if discomfort persists.
<b>Skin Contact:</b>	Wash affected area with soap and water and consult with local medical personnel if irritation persists.

<b>SECTION 5. Fire-Fighting Measures</b>	
<b>Fire:</b>	Not considered a fire hazard.
<b>Explosion:</b>	Not considered an explosion hazard.
<b>Fire Extinguishing Media:</b>	Use any means suitable for extinguishing surrounding fire.
<b>Special Information:</b>	Use protective clothing and breathing equipment appropriate for the surrounding fire and to protect against the dust that may be dispersed in the air.

<b>SECTION 6. Accidental Release Measures</b>	
Any dust from machining should be wet mopped or dry vacuumed.	

<b>SECTION 7. Handling and Storage</b>	
Any dust from machining should be wet mopped or dry vacuumed.	

<b>SECTION 8. Exposure Controls and Personal Protection</b>	
<b>Airborne Exposure Limits:</b>	See Section 2 (only applicable if dust is generated from machining).
<b>Ventilation System:</b>	Local or general exhaust ventilation recommended.
<b>Personal Respirators (NIOSH Approved):</b>	NIOSH/MSHA approved respirator for dust when exposure limit is exceeded.
<b>Skin Protection:</b>	Polymer gloves for prolonged dust exposure.
<b>Eye Protection:</b>	Safety goggles in the presence of airborne dust.



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<b>SECTION 9. Physical and Chemical Properties</b>			
<b>Appearance:</b>	White or Cream Solid	<b>pH:</b>	NIA
<b>Odor:</b>	Odorless	<b>Boiling Point:</b>	NIA
<b>Solubility:</b>	Insoluble in Water	<b>Melting Point:</b>	2054°C (3729°F)
<b>Specific Gravity:</b>	>4.1 g/cc	<b>Vapor Pressure/ Vapor Density:</b>	NIA

<b>SECTION 10. Stability and Reactivity</b>			
<b>Chemical Stability:</b>	Stable		
<b>Hazardous Decomposition:</b>	NIA	<b>Hazardous Polymerization:</b>	NIA
<b>Incompatibilities:</b>	NIA	<b>Conditions to Avoid:</b>	NIA

<b>SECTION 11. Toxicological Information</b>
NIA

<b>SECTION 12. Ecological Information</b>
NIA

<b>SECTION 13. Disposal Considerations</b>
This material is not hazardous per 40 CFR 261. Consultation with federal, state and local officials is recommended before disposal.

<b>SECTION 14. Transport Information</b>
Not regulated.