



MATERIAL SAFETY DATA SHEET

SECTION 1. Chemical Product and Company Identification			
Product Name:	Dense Zirconia Ceramic	Chemical Name:	Zirconium Oxide (ZrO ₂)
Supplier:	Superior Technical Ceramics Corp. 600 Industrial Park Road St. Albans, VT 05478 (802) 527-7726 phone (802) 527-1181 fax	<u>In Case of Emergency Call:</u> (802) 527-7726	
Synonym:	YTZP; Ytria stabilized zirconia ceramic		
Material Use:	Wear resistant or thermal insulating technical ceramics.		
Date Prepared:	June 23, 2009		
Prepared By:	Janna L. Bevins/Brian H. Gold		

SECTION 2. Composition, Information or Ingredients			
NAME:	CAS#:	% BY WEIGHT	COMMENTS:
Zirconium Oxide	1314-23-4	>89	5 mg/m ³ TLV and matter OSHA PEL
Yttrium Oxide	1314-36-9	<11	1 mg/m ³ TLV and matter OSHA PEL
Hafnium Oxide	12055-23-1	<11	0.5 mg/m ³ TLV and matter OSHA PEL

SECTION 3. Hazards Identification			
Emergency Overview:			
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
Lab Protective Equipment:	Eye protection and proper dust collection if machining occurs.		
Storage Color Code:	Green (General Storage)		
Potential Health Effects:			
Inhalation:	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.		
Ingestion:	No adverse effects expected.		
Skin Contact:	No adverse effects expected but dust may cause irritation.		
Eye Contact:	No adverse effects expected but dust may cause irritation.		
Chronic Exposure:	No adverse effects expected.		
Aggravation of Pre-existing Conditions:	Not expected to be a health hazard.		



MATERIAL SAFETY DATA SHEET

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

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

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

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

SECTION 8. Exposure Controls and Personal Protection	
Airborne Exposure Limits:	5 mg/m ³ TWA matter OSHA PEL
Ventilation System:	Local or general exhaust ventilation recommended.
Personal Respirators (NIOSH Approved):	NIOSH/MSHA approved respirator for dust when exposure limit is exceeded.
Skin Protection:	Polymer gloves for prolonged dust exposure.
Eye Protection:	Safety goggles in the presence of airborne dust.



MATERIAL SAFETY DATA SHEET

SECTION 9. Physical and Chemical Properties			
Appearance:	Ivory Solid	pH:	NIA
Odor:	Odorless	Boiling Point:	NIA
Solubility:	Soluble in H ₂ SO ₄ or HF	Melting Point:	2700°C (4892°F)
Specific Gravity:	6.0 g/cc	Vapor Pressure/ Vapor Density:	NIA

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

SECTION 11. Toxicological Information
NIA

SECTION 12. Ecological Information
NIA

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

SECTION 14. Transport Information
Not regulated.