



**TOSOH USA, INC.**

TOSOH

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Member of the TOSOH Group

## MATERIAL SAFETY DATA SHEET

### YTZ<sup>®</sup> GRINDING MEDIA

**For Product Information:** (614) 277-4348

**For Emergencies:** CHEMTREC (800) 424-9300

### 1. COMPOSITION/INGREDIENT DESCRIPTION

<u>Chemical</u>	<u>CAS #</u>	<u>OSHA</u>	
		<u>Hazardous(Y/N)</u>	<u>Concentration (%)</u>
Zirconium oxide	1314-23-4	Y	>88
Yttrium oxide	1314-36-9	Y	<6
Hafnium oxide	12055-23-1	N	<5
Aluminum oxide	1344-28-1	Y	<1

Certain of these substances and derivative substances have been identified as hazardous substance(s) by the Occupational Safety and Health Administration ("OSHA") and are subject to regulation by Federal and state regulatory authorities. Any use, application or processing of these products, alone or in combination with any other substances, should be done in conformance with all applicable Federal, state, local and international laws and regulations.

### 2. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** CAUTION. MAY CAUSE SKIN AND EYE IRRITATION. MEDIA, IF SPILLED, MAY PRESENT A SLIPPING HAZARD. EXERCISE CARE IN HANDLING AND STORAGE. THIS MATERIAL, WHEN PRESENT IN <1MM, MAY PRESENT AN INHALATION HAZARD.

**Physical Appearance and Odor:** Round, white molded pieces, odorless

#### POTENTIAL HEALTH EFFECTS:

**Acute Eye:** Dust may cause irritation.

**Acute Skin:** Dust may cause irritation, local swelling and redness.

**Acute Inhalation:** Dust may cause respiratory tract irritation.

**Acute Ingestion:** Low acute oral toxicity. Ingestion of large quantities may cause irritation of the mouth and throat, abdominal pain and diarrhea.

**Chronic Effects:** None known.

MATERIAL SAFETY DATA SHEET: YTZ<sup>®</sup> Grinding Media  
Date Prepared: August 12, 2003 Supersedes: None, Page 1 of 6

### 3. FIRST AID MEASURES

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**Eye Contact:** Rinse particulate matter from eye. Seek medical attention if irritation develops or persists or if visual changes occur.

**Skin Exposure:** Wash with plenty of soap and water. Seek medical attention if irritation develops or persists. Remove contaminated clothing and shoes and clean before re-use.

**Inhalation:** If respiratory irritation or distress occurs, remove victim to fresh air. Seek medical attention if respiratory irritation or distress continues.

**Ingestion:** If victim is conscious and alert, give 1-2 glasses of water to drink. Do not give anything by mouth to an unconscious person. Seek medical attention. Do not leave victim unattended.

**Medical Conditions Possibly Aggravated by Exposure:** Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis.

**Notes to Physician:** All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. No specific antidote available.

### 4. FIRE FIGHTING MEASURES

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**Flash point:** Not applicable

**Flammability limits (vol/vol%):** Lower: No data Upper: No data

**Extinguishing Media:** Dry chemical, foam, water, CO<sub>2</sub>

**Special Fire Fighting Procedures:** Firefighters should wear NIOSH/MSHA-approved self-contained breathing apparatus and full protective clothing. Cool containers exposed to fire with water.

**Unusual Fire and Explosion Hazards:** Like all organic and most dry chemicals, as a powder or dust, this product (when mixed with air in critical proportions and in the presence of an ignition source) may present an explosion hazard.

**Hazardous Decomposition Materials Under Fire Conditions:** None known

### 5. ACCIDENTAL RELEASE MEASURES

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**Evacuation Procedures and Safety:** Wear appropriate protective gear for the situation. (See Personal Protection information in Section 7).

**Cleanup and Disposal of Spill:** Sweep up and place in an appropriate closed container. Media, if spilled, may present a slipping hazard. Clean up residual material by washing area with water. Collect washings for disposal.

**Environmental and Regulatory Reporting:** Do not flush to drain. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

## 6. HANDLING AND STORAGE

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**Maximum Storage Temperatures:** Not determined

**Handling:** Avoid breathing dusts. Avoid direct or prolonged contact with skin and eyes. Media, if spilled, may present a slipping hazard. Exercise care in handling and storage.

**Storage:** Store in tightly-closed, original container. Store in an area that is cool, dry, and well-ventilated.

## 7. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**Introductory Remarks:** These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application.

**Exposure Guidelines:** The following limits apply to components of this material.

### Chemical

Zirconium compounds (as Zr)	5 mg/M <sup>3</sup> – ACGIH TWA	5mg/M <sup>3</sup> – OSHA PEL
Zirconium compounds (as Zr)	10 mg/M <sup>3</sup> – ACGIH STEL	10 mg/M <sup>3</sup> – OSHA STEL
Yttrium compounds (as Y)	1 mg/M <sup>3</sup> – ACGIH TWA	
Aluminum oxide	10 mg/M <sup>3</sup> – ACGIH TWA	15mg/M <sup>3</sup> – OSHA PEL (total dust)
Aluminum oxide		5mg/M <sup>3</sup> – OSHA PEL (respirable fraction)

(where: TWA = Time-Weighted Average (8-hour exposure), STEL = Short-Term Exposure Limit (15-minute time-weighted average exposure))

**Engineering Controls:** General area dilution/exhaust ventilation

**Respiratory Protection:** Dust may be irritating to the respiratory tract. Long-term repeated exposure to any dusts may be associated with negative respiratory effects. When respirators are required, select NIOSH/MSHA-approved equipment based on actual or potential airborne concentrations and in accordance with regulatory standards and/or industrial recommendations. Dust/mist filtering respirator is recommended.

**Eye/Face Protection:** A minimum of safety glasses with side shields is recommended.

**Skin Protection:** Skin contact should be minimized through the use of gloves and suitable long-sleeved clothing.

**Work Practice Controls:** The following general measures should be taken when working or handling this material: 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet. 3) Wash exposed skin promptly to remove accidental splashes of contact with this material.

## 8. PHYSICAL AND CHEMICAL PROPERTIES

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Physical and Chemical properties here represent typical properties of this product. Contact the manufacturer for exact specifications.

**Physical Appearance:** Round, white molded pieces

**Odor:** Odorless

**pH:** Not available.

**Bulk Density:** 5.9 - 6.1 g/cc

**Water Solubility:** Insoluble

**Melting Point Range:** Not available

**Boiling Point Range:** Not available

**Vapor Pressure:** Negligible

**Vapor Density:** Not available

## 9. STABILITY AND REACTIVITY

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**Chemical Stability:** This material is stable under normal handling and storage conditions described in Section 6.

**Conditions to be Avoided:** Extreme heat, open flame, dusting conditions.

**Materials/Chemicals to be Avoided:** None known.

**Hazardous Decomposition Products:** None known.

**Hazardous Polymerization:** Not applicable

## 10. TOXICOLOGICAL INFORMATION

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**Acute Eye Irritation:** No data available.

**Acute Skin Irritation:** No data available.

**Acute Dermal Toxicity:** No data available.

**Acute Respiratory Irritation:** No data available.

**Acute Inhalation Toxicity:** No data available.

**Acute Oral Toxicity:** LDLo >10g/kg, rat (Data for Yttrium oxide. LDLo=lowest lethal dose).

**Chronic Toxicity:** This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens. No additional test data found for product.

## 11. ECOLOGICAL INFORMATION

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**Ecotoxicological Information:** No data available.

**Chemical Fate Information:** No data available.

## 12. DISPOSAL CONSIDERATIONS

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**Waste disposal Method:** Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from Federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

**Container Handling and Disposal:** Empty container retains product residue. Handle as if full, observing all precautions outlined above. Do not reuse container for food or cosmetic storage. Do not cut, grind, or weld on or near this container. Keep empty container tightly closed. Rinse containers before disposal.

**EPA Hazardous Waste = NO**

## 13. TRANSPORTATION INFORMATION

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**Note:** The listed transportation classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

### US Department of Transportation:

Shipping name: Not regulated

Hazard Class: Not regulated

ID#: Not regulated

Packing Group: Not regulated

Labels: Not required

Emergency Guide#: Not regulated

## 14. REGULATORY INFORMATION

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### Inventory Status:

US (TSCA): Yes

Canada (DSL): Yes

Where: Yes = all ingredients are listed on the inventory, Exempt = All ingredients are either on the inventory or exempt from the requirements of listing, No = Not determined, or one or more ingredients are not on the inventory and are not exempt from listing

### SARA Title III Hazard Classes:

Fire Hazard: No

Reactive Hazard: No

Release of Pressure: No

Acute Health Hazard: No

Chronic Health Hazard: No

## 14. REGULATORY INFORMATION (continued)

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**SARA Extremely Hazardous Substances/CERCLA Hazardous Substances:** None

**California Proposition 65:** This product does not contain any components that are regulated under Proposition 65.

## 15. OTHER INFORMATION

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### National Fire Protection Association ("NFPA") Hazard Ratings:

Health: 0 (Minimal)

Flammability: 0 (Minimal)

Instability: 0 (Minimal)

### National Paint and Coatings Hazardous Materials Identification System ("HMIS") Hazard Ratings:

Health: 0 (Minimal)

Flammability: 0 (Minimal)

Reactivity: 0 (Minimal)

**Reason for Revision(s):** Not applicable

**Prepared by:** J. Kranetz

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**END OF MATERIAL SAFETY DATA SHEET**