



## Safety Data Sheet

# Zirconia Toughened Alumina Powder "Ready To Press" (RTP)

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### SECTION 1: Identification

#### Product identifier

|                        |  |
|------------------------|--|
| Product name           | Zirconia Toughened Alumina Powder (RTP)  |
| Substance name         | Zirconia Toughened Alumina<br>$X(\text{ZrO}_2) \bullet Y(\text{Al}_2\text{O}_3)$ |
| Other names / synonyms | Zirconia Toughened Alumina RTP, ZTA; (ZTA-02, ZTA-14, ZTA-20)                    |

#### Recommended use of the chemical and restrictions on use

Raw material for technical ceramic components.

#### Supplier's details

|         |  |
|---------|--|
| Name    | Superior Technical Ceramics                                  |
| Address | 600 Industrial Park Road<br>St. Albans, Vermont 05478<br>USA |

|           |              |
|-----------|--------------|
| Telephone | 802-527-7726 |
| Fax       | 802-527-1181 |

#### Emergency phone number(s)

802-527-7726

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### SECTION 2: Hazard identification

#### Classification of the substance or mixture

Not a hazardous substance or mixture.

#### GHS label elements, including precautionary statements

Not a hazardous substance or mixture.

#### Other hazards which do not result in classification

Not a hazardous substance or mixture.

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### SECTION 3: Composition/information on ingredients

#### Components

##### 1. Aluminum oxide

|               |           |
|---------------|-----------|
| Concentration | 55 - 95 % |
|---------------|-----------|

|                        |  |
|------------------------|--|
| Other names / synonyms | activated Alumina; alpha-Alumina; Alumina; Aluminum oxide; Aluminum oxide (fibrous forms); Aluminum oxide (Powder or Fiber); ALUMINUMOXIDE |
|------------------------|--|

|         |           |
|---------|-----------|
| CAS no. | 1344-28-1 |
|---------|-----------|

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### 2. Zirconium oxide

Concentration 2 - 35 %

Other names / synonyms Zirconium oxide  
CAS no. 1314-23-4

### 3. Organic Binders

Concentration 3 - 10 %

Other names / synonyms Organic Binders

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## SECTION 4: First-aid measures

### Description of necessary first-aid measures

|                         |  |
|-------------------------|--|
| General advice          | Production poses dust or machining swarf that may cause irritation to eyes, nose, throat, and/or skin.                     |
| If inhaled              | Move to fresh air and consult with local medical personnel if discomfort persists.   |
| In case of skin contact | Wash affected area with soap and water and consult with local medical personnel if irritation persists.                    |
| In case of eye contact  | Flush with tepid water for a minimum of 15 minutes and consult with local medical personnel if discomfort persists.        |
| If swallowed            | Administer water to dilute, but not if person is unconscious. Consult with local medical personnel if discomfort persists. |

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## SECTION 5: Fire-fighting measures

### Suitable extinguishing media

Use any means suitable for extinguishing surrounding fire.

### Specific hazards arising from the chemical

Possible Class A fire hazard – combustible vapors can develop in the headspace over the product. Flash point is 220°C (428°F).

### Special protective actions for fire-fighters

Use protective clothing and breathing equipment appropriate for the surrounding fire and to protect against the dust that may be dispersed in the air.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Any dust from machining should be wet mopped or dry vacuumed.

### Methods and materials for containment and cleaning up

Any dust from machining should be wet mopped or dry vacuumed.

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## SECTION 7: Handling and storage

### Precautions for safe handling

Any dust from machining should be wet mopped or dry vacuumed.

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## SECTION 8: Exposure controls/personal protection

### Control parameters

#### 1. alpha-Alumina (CAS: 1344-28-1)

PEL (Inhalation): see PNOR (Cal/OSHA)  
OSHA Annotated Table Z-1, [www.osha.gov](http://www.osha.gov)

#### 2. alpha-Alumina (CAS: 1344-28-1)

REL (Inhalation): See Appendix D (NIOSH)  
OSHA Annotated Table Z-1, [www.osha.gov](http://www.osha.gov)

#### 3. alpha-Alumina, Total dust (CAS: 1344-28-1)

PEL (Inhalation): 15 mg/m<sup>3</sup> (OSHA)  
OSHA Annotated Table Z-1, [www.osha.gov](http://www.osha.gov)

#### 4. alpha-Alumina, Total dust (CAS: 1344-28-1)

PEL (Inhalation): 10 mg/m<sup>3</sup> (Cal/OSHA)  
OSHA Annotated Table Z-1, [www.osha.gov](http://www.osha.gov)

#### 5. alpha-Alumina, Respirable fraction (CAS: 1344-28-1)

PEL (Inhalation): 5 mg/m<sup>3</sup> (OSHA)  
OSHA Annotated Table Z-1, [www.osha.gov](http://www.osha.gov)

#### 6. alpha-Alumina, Respirable fraction (CAS: 1344-28-1)

PEL (Inhalation): 5 mg/m<sup>3</sup> (Cal/OSHA)  
OSHA Annotated Table Z-1, [www.osha.gov](http://www.osha.gov)

### Appropriate engineering controls

Local or general exhaust ventilation recommended.

### Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Safety goggles in the presence of airborne dust.

#### Skin protection

Polymer gloves for prolonged dust exposure.

#### Respiratory protection

NIOSH/MSHA approved respirator for dust when exposure limit is exceeded.

#### Thermal hazards

CO and CO<sub>2</sub> in a fire and at temperatures >220°C (428°F).

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## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

Appearance/form

White or Off White Flowable Powder

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|   |                    |
|---|--------------------|
| Odor                                    | Odorless           |
| Odor threshold                          | N/A                |
| pH                                      | N/A                |
| Melting point                           | N/A                |
| Initial boiling point and boiling range | N/A                |
| Flash point                             | N/A                |
| Evaporation rate                        | N/A                |
| Flammability (solid, gas)               | N/A                |
| Upper/lower flammability limits         | N/A                |
| Upper/lower explosive limits            | N/A                |
| Vapor pressure                          | N/A                |
| Vapor density                           | N/A                |
| Relative density                        | >1.1 g/cc          |
| Solubility(ies)                         | Insoluble in Water |
| Partition coefficient: n-octanol/water  | N/A                |
| Auto-ignition temperature               | N/A                |
| Decomposition temperature               | N/A                |
| Viscosity                               | N/A                |
| Explosive properties                    | N/A                |
| Oxidizing properties                    | N/A                |

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## SECTION 10: Stability and reactivity

### Chemical stability

Stable

### Hazardous decomposition products

CO and CO<sub>2</sub> in a fire and at temperatures >220°C (428°F).

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## SECTION 11: Toxicological information

No Applicable Information Found

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## SECTION 12: Ecological information

No Applicable Information Found

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## SECTION 13: Disposal considerations

### Disposal of the product

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

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## SECTION 14: Transport information

### DOT (US)

Not dangerous goods

### IMDG

Not dangerous goods

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IATA

Not dangerous goods

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### SECTION 15: Regulatory information

#### US FEDERAL

##### TSCA

CAS# 1344-28-1 is listed on the TSCA inventory.

CAS# 1314-23-4 is listed on the TSCA inventory.

##### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

##### Section 313

CAS# 1344-28-1 is reported under Section 313.

##### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

#### US STATE

**CAS# 1344-28-1** can be found on the following state right to know lists:

Illinois, Minnesota, Massachusetts, New Jersey, Pennsylvania, Texas.

Consult your state and local resources for further information.

##### California Prop 65

Substance Not Listed

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### SECTION 16: Other information

#### Further information/disclaimer

Although reasonable care has been taken to provide accurate and current information in preparation of this document, Superior Technical Ceramics extends no warranties, makes no representation and assumes no responsibility for any loss, damage, or injury of any kind which may result from reliance of information provided in this document by any person.

#### Preparation Information

Prepared by: Superior Technical Ceramics

1-802-527-7726

lab@ceramics.net

Prepared on: June 1, 2015

Last Revision: --