SECTION 1: Identification

Product identifier

Product name	Dense Zirconia Toughened Alumina Ceramic	
Substance name	Zirconia Toughened Alumina	
	$X(ZrO_2) \bullet Y(Al_2O_3)$	
Other names / synonyms	Zirconia Toughened Alumina, ZTA; (ZTA-02, ZTA-14, ZTA-20)	

Recommended use of the chemical and restrictions on use Technical ceramic components.

Supplier's details

Name Address

Heeger Materials Inc.

230 Steele St Denver, CO 80206 United States

Telephone

1-833-222-8587

802-527-7726

Emergency phone number(s)

SECTION 2: Hazard identification

This product is considered an article and does not pose any health hazard under normal use. The health effects listed below may be relevant when dust is generated during machining or other processing conditions. lnc

Classification of the substance or mixture

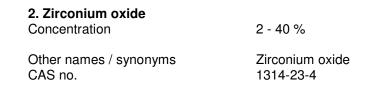
Not a hazardous substance or mixture.

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.

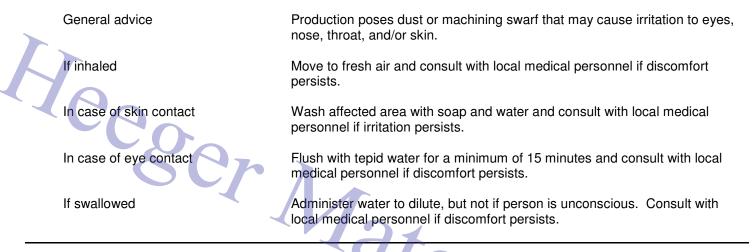
SECTION 3: Composition/information on ingredients

Components 1. Aluminum oxide Concentration 60 - 98 % 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



SECTION 4: First-aid measures

Description of necessary first-aid measures



SECTION 5: Fire-fighting measures

Suitable extinguishing media

Use any means suitable for extinguishing surrounding fire.

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.

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.

SECTION 7: Handling and storage

Precautions for safe handling

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

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

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

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

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

PEL (Inhalation): 15 mg/m3 (OSHA) OSHA Annotated Table Z-1, www.osha.gov

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

PEL (Inhalation): 10 mg/m3 (Cal/OSHA) OSHA Annotated Table Z-1, www.osha.gov

5. alpha-Alumina, Respirable fraction (CAS: 1344-28-1) PEL (Inhalation): 5 mg/m3 (OSHA) OSHA Annotated Table Z-1, www.osha.gov

6. alpha-Alumina, Respirable fraction (CAS: 1344-28-1) PEL (Inhalation): 5 mg/m3 (Cal/OSHA) OSHA Annotated Table Z-1, 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

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

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form Odor Odor threshold pH Melting point Initial boiling point and boiling range Flash point Evaporation rate Flammability (solid, gas) Upper/lower flammability limits Upper/lower explosive limits Vapor pressure Vapor density Relative density	White or Cream Solid Odorless N/A N/A 2054°C (3729°F) N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A
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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

SECTION 10: Stability and reactivity

Chemical stability Stable

SECTION 11: Toxicological information

No Applicable Information Found

SECTION 12: Ecological information

No Applicable Information Found

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 ion . before disposal.

SECTION 14: Transport information

DOT (US) Not dangerous goods

IMDG Not dangerous goods

ΙΑΤΑ Not dangerous goods

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

SECTION 16: Other information

Further information/disclaimer

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