

# Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910 1200. Standard must be consulted for specific requirements.

**IDENTITY (as Used on Label and List):** Zirconium Oxide beads 1.0mm (ZrO<sub>2</sub>+Y<sub>2</sub>O<sub>3</sub>)

## Section I - Company Identification

<b>Manufacturer/Supplier name:</b>	<b>Emergency Telephone Number:</b> (518) 674-3510
Next Advance, Inc.	<b>Telephone Number for Information:</b> (518) 674-3510
2113 NY-7	<b>Date Prepared:</b> 09/07/2016
Troy NY 12180	

## Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity, Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Zirconium Oxide	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	STEL - 5 mg/m <sup>3</sup>	95%
Yttrium Oxide	None Listed	None Listed	None Listed	5%

## Section III - Physical/Chemical Characteristics

<b>Boiling Point</b>	>5000°C	<b>Specific Gravity (H2O = 1)</b>	6.2 g/cm <sup>3</sup>
<b>Vapor Pressure (mm Hg)</b>	N/A	<b>Melting Point</b>	~ 2600°C
<b>Vapor Density (AIR = 1)</b>	N/A	<b>Evaporation Rate (Butyl Acetate = 1)</b>	N/A

**Solubility in Water:** Not Soluble

**Appearance and Odor:** white, hard spheres formed to 1.0 mm diameter.

## Section IV - Fire and Explosion Hazard Data

<b>Flash Point (Method Used):</b> N/A - Non-flammable	<b>Flammable Limits</b>	<b>LEL:</b> N/A	<b>UEL:</b> N/A
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**Extinguishing Media:** Use suitable extinguishing media for surrounding material and type of fire.

**Special Fire Fighting Procedures:** Firefighters must wear full face, self-contained breathing apparatus and full protective clothing. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

**Unusual Fire and Explosion Hazards:** Zirconium oxide may emit toxic fumes if involved in a fire.

**Section V - Reactivity Data**

<b>Stability:</b>	Unstable		<b>Conditions to Avoid:</b> None Identified
	Stable	X	

**Incompatibility (Materials to Avoid):** None Identified**Hazardous Decomposition or Byproducts:** Zirconium and oxides of zirconium.

<b>Hazardous Polymerization:</b>	May Occur		<b>Conditions to Avoid:</b> None Identified
	Will Not Occur	X	

**Section VI - Health Hazard Data****Effects of exposure:** To the best of our knowledge the chemical, physical and toxicological properties of zirconium oxide and yttrium oxide have not been thoroughly investigated and recorded.

Cerium salts: may cause irritation of skin.

Zirconium compounds in common use are insoluble and considered inert. Pulmonary granuloma in zirconium workers has been reported. (Sax, Dangerous Properties of Industrial Materials)

**Acute Effects:****Inhalation:** Dusts - May cause irritation to the respiratory tract, mucous membranes or the nose and throat. May cause asthma attacks and lung damage such as lung granulomas. Large doses may cause writhing, loss of muscle coordination, labored respiration, sedation, hypotension and cardiovascular collapse.

Beads - May cause choking.

**Skin:** Dusts - May cause irritation.**Ingestion:** No acute health effects recorded.**Eye:** Dusts - May cause irritation.**Chronic Effects:****Inhalation:** May cause pulmonary edema. Prolonged or repeated inhalation may cause writhing, loss of muscle coordination, labored respiration, sedation, hypotension and cardiovascular collapse.**Skin:** May cause irritation.**Ingestion:** May affect the coagulation rate of the blood.**Eye:** No chronic health effects recorded.

<b>Carcinogenicity:</b>	<b>NTP?</b> No	<b>IARC Monographs?</b> No	<b>OSHA Regulated?</b> No
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**Target Organs:** May affect the respiratory system and skin.

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**Medical Conditions Generally Aggravated by Exposure:** Pre-existing respiratory disorders.

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**Emergency and First Aid Procedures:**

**Inhalation:** Dusts - Remove victim to fresh air. Keep warm and quiet. Give oxygen if breathing is difficult and seek medical attention.

Beads - If victim is choking dislodge foreign object by performing the Heimlich Maneuver. Seek immediate medical assistance.

**Skin:** Dusts - Remove contaminated clothing, brush material off skin, and wash affected area with mild soap and water. Seek medical attention.

**Ingestion:** Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

**Eye:** Dusts - Flush eyes with plenty of water for at least 15 minutes using an eyewash fountain. Lift upper and lower lids and rinse well under them. Get medical attention if irritation develops or persists.

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**Section VII - Precautions for Safe Handling and Use**

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**Steps to Be Taken in Case Material Is Released or Spilled:** Dusts - Wearing full protective clothing, isolate the area and insure proper ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a container for proper disposal. Take care not to raise dust.

Beads - Spilled or loose beads may pose a tripping or falling hazard. Be sure to contain all loose beads - do not walk on or place items on beads.

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**Waste Disposal Method:** Dispose of in accordance with Local, State and Federal Waste Disposal Regulations.

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**Precautions to Be Taken in Handling and Storing:** Store in tightly closed containers in a cool, dry place. Wash hands and face thoroughly after handling and before meals.

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**Other Precautions:** Spilled or loose beads may pose a tripping or falling hazard. Be sure to contain all loose beads - do not walk on or place items on beads.

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**Section VII - Control Measures**

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**Respiratory Protection (Specify Type):** Wear a NIOSH/MSHA approved dust respirator under dusting conditions.

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<b>Ventilation:</b>	Local Exhaust:	X	Special:	
	Mechanical (General):	X	Other:	

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**Protective Gloves:** Rubber gloves

**Eye Protection:** Safety glasses with side shields

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**Other Protective Clothing or Equipment:** Protective gear suitable to prevent contamination.

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**Work/Hygienic Practices:** Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air. Maintain eyewash capable of sustained flushing, safety drench shower and facilities for washing.

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The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. Next Advance, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.