



SAFETY DATA SHEET

SDS-730-rev2 Issue Date: 07/20/2017

YTTRIUM-STABILIZED ZIRCONIA MICROSPHERES, SPHERES AND BEADS

1. IDENTIFICATION OF SUBSTANCE

- 1.1 PRODUCT NAME(S) Yttrium-Stabilized Zirconia Microspheres, Spheres and Beads
1.2 PRODUCT IDENTIFIER(S) YSZMS, YSZS, YSZB
1.3 INTENDED USE Industrial and research applications
1.4 SUPPLIER'S DETAILS Cospheric LLC, PO Box 6762, Santa Barbara, CA 93160
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1.5 EMERGENCY TELEPHONE +1-805-687-3747 Monday-Friday, 08:00-17:00 PST [UTC-8]

2. HAZARDS IDENTIFICATION

- 2.1 HAZARD CLASSIFICATION Not classified as a hazardous material.
2.2 GHS LABEL ELEMENTS
Signal word Warning
Hazard statements Dust may cause skin, eye and respiratory irritation.
Precautionary statements Avoid exposure to dust. Use suitable personal protective equipment.
2.3 HAZARDS NOT OTHERWISE CLASSIFIED Spilled material is extremely slippery.

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NUMBER	% (W/W)
Zirconium Dioxide, Yttrium Stabilized	114168-16-0	>99%

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

- Eye contact Rinse with plenty of water. Seek medical advice if symptoms persist.
Skin contact If symptoms occur, wash with soap and water.
Inhalation If symptoms occur, move to fresh air. Seek medical advice if necessary.
Ingestion If symptoms occur, seek medical advice.

4.2 IMPORTANT SYMPTOMS/EFFECTS, ACUTE OR DELAYED

Inhalation of high concentrations of dust may cause respiratory irritation.

5. FIRE-FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

Use extinguishing measures that are appropriate to local circumstances and the surrounding fire.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

None known.

5.3 SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS



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As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Follow precautions for safe handling described in this safety data sheet (Section 8).

6.2 ENVIRONMENTAL PRECAUTIONS

Dispose of any waste according to prescribed federal, state, local and competent authority guidelines.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEAN UP

Collect spillage with shovel, broom or the like. Transfer to a container for disposal.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Avoid handling practices that cause dust formation. Avoid inhalation of high concentrations of dust. Observe occupational exposure limits and minimize the risk of inhalation of dust.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store in tightly closed original container in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

This product is not a hazardous material. The exposure limit for nuisance dust is referenced.

Nuisance Dust (Particles Not Otherwise Regulated)

OSHA Permissible Exposure Limit (PEL)	Respirable fraction	5mg/m ³
	Total dust	15mg/m ³
Zirconium and compounds	Inhalable fraction	1 (mg/m ³)

8.2 ENGINEERING CONTROLS

Avoid handling practices that cause dust formation. Use local exhaust ventilation to prevent or control exposure.

8.3 INDIVIDUAL PROTECTION MEASURES (PERSONAL PROTECTIVE EQUIPMENT)

Respiratory protection: When handling practices cause dust formation, select respiratory protection appropriate for the particle size of the material.

Eye/face protection: Chemical goggles.

Skin protection: Wear suitable protective clothing and gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Solid spherical particles
Relative density	Per product specification



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Softening Temperature	Per product specification
Flammability	Not classified as flammable.
Flammable limits	Not-applicable
Auto-ignition temperature	Not-applicable
Decomposition temperature	No information available
Odor	Odorless
Vapor pressure	Not-applicable
Vapor density	Not-applicable
pH	Not-applicable
Melting point	Not-applicable
Solubility in water	Insoluble
Initial boiling point	Not-applicable
Flash point	Not-applicable
Evaporation rate	Not-applicable
Partition coefficient	Not-applicable
Viscosity	Not-applicable

10. STABILITY AND REACTIVITY

Reactivity	Non-reactive under normal conditions of use.
Chemical stability	Stable under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Likely route(s) of exposure	Dermal, inhalation
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SIGNS AND SYMPTOMS OF EXPOSURE

Eye contact	Direct contact with eyes may cause temporary mechanical irritation. Signs and symptoms may include pain, redness.
Skin contact	Direct contact with skin may cause sensitization in hypersensitive individuals. Signs and symptoms may include redness, pain and itching.
Inhalation	Inhalation above recommended exposure levels may cause respiratory irritation including cough.
Ingestion	No harmful effects expected in amounts likely to be ingested by accident. May cause discomfort if swallowed.

TOXICOLOGICAL DATA

Acute toxicity	Ingredient name	Result	Species	Dose
	Zirconium oxide	LD50	Rat-Oral	> 5000 mg/kg



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	Yttrium oxide	LD50	Rat-Oral	> 5000 mg/kg
Skin corrosion/irritation	No information available/not sufficient for classification			
Serious eye damage/eye irritation	No information available/not sufficient for classification			
Respiratory or skin sensitization	No information available/not sufficient for classification			
Germ cell mutagenicity	No information available/not sufficient for classification			
Carcinogenicity	Not listed as a carcinogen (OSHA, NTP, IARC)			
Reproductive toxicity	No information available/not sufficient for classification			
STOT-single exposure	No information available/not sufficient for classification			
STOT-repeated exposure	No information available/not sufficient for classification			
Aspiration hazard	No information available/not sufficient for classification			

12. ECOLOGICAL INFORMATION

Toxicity	Ingredient name	Result	Species	Dose	Exposure
	Zirconium oxide	LD50	Danio rerio	>100 mg/L	96 hr
	Yttrium oxide	LD50	Danio rerio	>100 mg/L	96 hr
Persistence and degradability	No information available				
Bioaccumulation potential	No information available				
Mobility in soil	No information available				

13. DISPOSAL CONSIDERATIONS

Dispose of any waste according to prescribed federal, state, local and competent authority guidelines.

14. TRANSPORTATION INFORMATION

This product is not subject to regulations for the transport of hazardous materials (DOT, IATA, IMO).

15. REGULATORY INFORMATION

This SDS has been prepared to meet the US OSHA Hazard Communication Standard, 29 CFR 1910.1200.

16. OTHER INFORMATION

The information contained in this document is correct to the best of our knowledge at the date of publication. It should not be viewed as all inclusive, but as a guide only. It does not represent any guarantee of the properties of the product. Cospheric LLC shall not be held liable for any damage resulting from handling of or from contact with the above product. For these reasons, it is important that product users carry out their own tests to satisfy themselves as to the suitability of the safety precautions for their own intended applications.

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