



SAFETY DATA SHEET

Regulation (EC) No 1907/2006 (REACH)

(Revision: 3/22/16)

Section 1 Identification of the Substance/Preparation and of the Company/Undertaking.

1.1 Product Identifier

Product Type: Stabilized Zirconia Ceramics

Trade Names: ZR Sintering Beads

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Product Use: Ceramic Material for Dental Prosthetics

Uses Advised Against: For professional use only.

1.3 Details of the Supplier of the Substance or Mixture

Manufacturer:

Whip Mix Corporation

361 Farmington Avenue

Louisville, Kentucky, USA 40209

Emergency Telephone Number: (502) 637-1451

Fax Number: (502) 634-4512

EU Importer

Whip Mix Europe GmbH

Wißstrasse 26 – 28

D – 44137 Dortmund

Germany

+49 (0) 231 / 567 70 8-0

1.4 Emergency Telephone Number

Transportation Emergencies:

For Hazardous Materials [or Dangerous Goods] Incident

Spill, Leak, Fire, Exposure, or Accident

Call CHEMTREC Day or Night

Within USA and Canada: 1-800-424-9300 CCN216797

Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Other Product Information:

www.whipmix.com

Section 2 Hazard Identification

2.1 Classification of the Mixture:

CLP/GHS Classification (1272/2008):

Health Hazards	Physical Hazards	Environmental Hazards
Not Hazardous	Not Hazardous	Not Hazardous

2.2 Label Elements

None required

2.3 Other Hazards: None

Section 3 Composition/Information on Ingredients.

<u>Substance</u>	<u>CAS No. / EC Number</u>	<u>%</u>	<u>CLP/GHS Classification (1272/2008)</u>
Zirconium Oxide	1314-23-4 / 215-227-7	80-99	Not hazardous
Yttrium Oxide	1314-36-9 / 215-233-5	0-10	Not hazardous
Hafnium Oxide	12055-23-1 /	0-1	Not hazardous

See Section 16 for full text of GHS and EU Classifications.

Section 4 First-Aid Measures.

4.1 Description of First Aid Measures

Inhalation: Remove to fresh air. If irritation or difficulty in breathing occurs, get medical attention.

Eyes: Flush eyes with large quantities of water, holding the eyelids apart. If irritation persists consult a physician.

Skin: No first aid is required. Wash skin with soap and water. If irritation develops, get medical attention.

Ingestion: No adverse effects expected. If large amounts are swallowed or if irritation or discomfort occurs, get medical attention.

4.2 Most Important symptoms and effects, both acute and delayed: May cause mechanical eye irritation. Prolonged skin contact may cause mechanical irritation. Inhalation of dust may cause upper respiratory tract irritation.

4.3 Indication of any immediate medical attention and special treatment needed: Immediate medical attention is not required.

Section 5 Fire-Fighting Measures.

5.1 Extinguishing Media: Use media appropriate for the surrounding fire.

5.2 Special Hazards Arising from the Substance or Mixture: None known.

5.3 Advice for Fire-Fighters: Firefighters should wear full emergency equipment and approved positive pressure self-contained breathing apparatus. Cool fire exposed containers with water.

Section 6 Accidental Release Measures.

6.1 Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective equipment. Avoid contact with eyes. Avoid breathing dust.

6.2 Environmental Precautions: Report releases as required by local and national authorities.

6.3 Methods and Material for Containment and Cleaning Up: Sweep up avoiding creating airborne dust and place into an appropriate container for disposal. Wash spill area with a damp cloth to remove residue.

6.4 Reference to Other Sections: Refer to Section 8 for personal protective equipment and Section 13 for disposal information.

Section 7 Handling and Storage.

7.1 Precautions for Safe Handling: Avoid contact with eyes. Wash thoroughly after handling. Keep containers closed when not in use. Do not reuse containers.

7.2 Conditions for Safe Storage, Including any Incompatibilities: Store as directed on package insert.

7.3 Specific end use(s):

Industrial uses: None identified

Professional uses: Ceramic Material for Dental Prosthetics

Section 8 Exposure Controls/Personal Protection

8.1 Control Parameters:

Zirconium Oxide (as zirconium compounds)	5 mg/m3 TWA OSHA PEL 5 mg/m3 TWA, 10 mg/m3 STEL ACGIH TLV 5 mg/m3 TWA, 10 mg/m3 STEL Belgium OEL 1 mg/m3 TWA, 1 mg/m3 STEL (inhalable fraction Germany OEL 5 mg/m3 TWA, 10 mg/m3 STEL Ireland OEL 5 mg/m3 TWA, 10 mg/m3 STEL Spain OEL 5 mg/m3 TWA, 10 mg/m3 STEL UK OEL
Yttrium Oxide	1 mg/m3 TWA OSHA PEL 1 mg/m3 TWA ACGIH TLV
Hafnium Oxide	0.5 mg/m3 TWA OSHA PEL 0.5 mg/m3 TWA ACGIH TLV

8.2 Exposure Controls:

Recommended Monitoring Procedures: None.

Appropriate engineering controls: Use adequate general or local exhaust ventilation to minimize exposures levels.

Personal Protective Measurers

Respiratory protection: None normally required. If the exposures are excessive and irritation is experienced an approved dust/mist respirator appropriate for the form and concentration of the contaminants should be used. Selection and use of respiratory equipment must be in accordance with applicable regulations and good industrial hygiene practice.

Skin protection: None required. Wash hands thoroughly after handling.

Eye protection: Wear safety glasses if contact is possible.

Other: Protective clothing as required to avoid prolonged skin contact.

Section 9 Physical and Chemical Properties.

9.1 Information on basic Physical and Chemical Properties

Appearance: White, light yellow or tan beads

Odor: No odor

Odor threshold: Not available

Melting point/freezing point: 4000°F (2000°C)

Flash point: Not flammable

Flammability (solid, gas): Not applicable

Flammable limits: LEL: Not applicable

Vapor pressure: Not applicable

Relative density: 5.9-6.1

Partition coefficient: n-octanol/water: Not available

Decomposition temperature: Not available

Explosive Properties: Not applicable

pH: Not available

Boiling point: Not available

Evaporation rate: Not available

UEL: Not applicable

Vapor density (air = 1): Not available

Solubility In Water: Insoluble

Auto-ignition temperature: Not applicable

Viscosity: Not applicable

Oxidizing Properties: Not applicable

9.2 Other Information: None available

Section 10 Stability and Reactivity.

10.1 Reactivity: Not expected to be reactive.

10.2 Chemical stability: Stable.

10.3 Possibility of hazardous reactions: None known.

10.4 Conditions to avoid: Avoid dusty conditions.

10.5 Incompatible materials: None known.

10.6 Hazardous decomposition products: None known.

Section 11 Toxicological Information.

11.1 Information on Toxicological Effects:

Potential Health Effects:

Eyes: Dust may cause mechanical irritation with redness and tearing.

Skin: Prolonged skin contact may cause mechanical irritation.

Ingestion: Swallowing large amounts may cause gastrointestinal irritation and nausea.

Inhalation: Dust may cause irritation of the upper respiratory tract with coughing and difficulty in breathing.

Chronic Health Effects: None known.

Acute Toxicity Data:

Zirconium Oxide: Oral rat LD50 >5000 mg/kg, Inhalation rat LC50 >4.3 mg/L/4 hr (no mortalities, maximum attainable)

concentration)
Yttrium Oxide: Oral rat LD50 >5000 mg/kg, Inhalation rat LC50 >5.09 mg/L
Hafnium Oxide: Oral rat LD50 >5000 mg/kg, Inhalation rat LC50 >4.3 mg/L/4 hr (no mortalities, maximum attainable concentration)

Section 12. Ecological Data.

12.1 Ecotoxicity:

Zirconium Oxide: 96 hr LC50 Danio rerio >100 mg/L, 48 hr EC50 daphnia magna >100 mg/L, 72 hr EC50

Desmodesmus subspicatus >100 mg/L

Yttrium Oxide: 96 hr LL50 Danio rerio >100 mg/L, 48 hr EC50 daphnia magna >100 mg/L, 72 hr EL50 Desmodesmus subspicatus >100 mg/L

Hafnium Oxide: 96 hr LC50 Danio rerio >100 mg/L, 48 hr EC50 daphnia magna >100 mg/L, 72 hr EC50

Pseudokirchnerella subcapitata >100 mg/L

12.2 Persistence and degradability: Biodegradation is not applicable to inorganic substances.

12.3 Bioaccumulative potential: No data available.

12.4 Mobility in soil: No data available.

12.5 Results of PBT and vPvB assessment: Not required.

12.6 Other adverse effects: Not required.

Section 13. Disposal Considerations.

13.1 Waste Treatment Methods: Dispose in accordance with all national and local regulations.

Section 14. Transport Information.

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Hazard Class(s)	14.4 Packing Group	14.5 Environmental Hazards
US DOT		Not Regulated			
Canadian TDG		Not Regulated			
EU ADR/RID		Not Regulated			
IMDG		Not Regulated			
IATA/ICAO		Not Regulated			

14.6 Special precautions for User: Not applicable

14.7 Transport in Bulk According to Annex III MARPOL 73/78 and the IBC Code): Not applicable – product is transported only in packaged form.

Section 15 Regulatory Information.

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

US Regulations

SARA Section 313 (40 CFR 372): This product contains the following toxic chemical(s) subject to reporting requirements of SARA 313: None

SARA Section 311/312 (40 CFR 370) Hazard Categories: Not hazardous

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA): This product is not subject to CERCLA reporting requirements. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

International Chemical Inventories:

United States Toxic Substances Control Act (TSCA): All of the components of this product are listed on the TSCA inventory.

German WGK: nwg

16. Other Information.

HMIS Rating: Health 1 Flammability 0 Reactivity 0

Hazard: 4-Severe; 3-Serious; 2-Moderate; 1-Slight; 0-Minimum

CLP/GHS Classification and H Phrases for Reference (See Section 3)

None

Prepared By:

Denise A. Deeds

Translated By:

Date: March 23, 2015

Date: