stc Material Solutions
A Unit of IDEX Corporation

Safety Data Sheet
Dense Magnesia Stabilized Zirconia Ceramic

SECTION 1: Identification

Product identifier

Product name	Dense Magnesia Stabilized Zirconia Ceramic
Substance name	Magnesia Stabilized Zirconia $X(MgO)\bullet Y(ZrO_2)$
Other names / synonyms	Magnesia Stabilized Zirconia Ceramic, Mag Stabilized Zirconia, MSZ; (MSZ-200, MSZ-300),TTZ

Recommended use of the chemical and restrictions on use
Technical Ceramic Components

Supplier's details

Name	Superior Technical Ceramics
Address	600 Industrial Park Road St. Albans, Vermont 05478 USA
Telephone	802-527-7726
Fax	802-527-1181

Emergency phone number(s)

802-527-7726

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.

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. Zirconium oxide

Concentration	80 - 99 %

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

2. Magnesium oxide

Concentration	0 - 10 %
Other names / synonyms	Magnesium oxide
CAS no.	1309-48-4

3. Hafnium Oxide

Concentration	0 - 1 %
Other names / synonyms	Hafnium Oxide
CAS no.	12055-23-1

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	Hazard is principally that of a nuisance dust only as a byproduct of machining. Coughing or shortness of breath may occur in cases of excessive inhalation.
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.

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

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. Magnesium oxide fume - Total Particulate (CAS: 1309-48-4)
PEL (Inhalation): 15 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

2. Magnesium oxide fume - Total Particulate (CAS: 1309-48-4)
PEL (Inhalation): 10 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

3. Magnesium oxide fume - Total Particulate (CAS: 1309-48-4)
REL (Inhalation): See Appendix D (NIOSH)
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
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	White, Light Yellow or Tan Solid
Odor	Odorless
Odor threshold	N/A
pH	N/A
Melting point	2200ºC (4000ºF)
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	5.6-5.8 g/cc
Solubility(ies)	N/A
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 before disposal.

SECTION 14: Transport information

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

SECTION 15: Regulatory information

US FEDERAL

TSCA
CAS# 1314-23-4 Zirconium Oxide is listed on the TSCA inventory.
CAS# 1309-48-4 Magnesium Oxide is listed on the TSCA inventory.
CAS# 12055-23-1 Hafnium Oxide is listed on the TSCA inventory.
SARA Section 302 Extremely Hazardous Substances
Substance Not Listed.
Section 313
Substance Not Listed.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

US STATE

CAS# 1309-48-4 Magnesium Oxide can be found on the following state right to know lists:
Florida, Illinois, New Jersey, Pennsylvania, Texas (regulated under a synonym).
Consult your state and local resources for further information.

California Prop 65
No components on list.

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: -- verified March 22, 2024