

MATERIALS SAFETY DATA SHEET



01 PRODUCT IDENTIFICATION

Manufacture/Supplier: DMAX Co., Ltd.

37-26, Dasa-ro 71 gil, Dasa-eup, Dalseong-gun,
Daegu, 42907, Korea

Emergency Phone : +82-53-592-3146

Business Phone : +82-53-592-3146

Fax : +82-53-592-3148

Product Name: EveryClean

Recommended use of the product and restrictions on use:

- **Recommended use:** Cleaning for the combustion chamber of the sintering furnace
- **Restrictions on use:** Professional application

02 HAZARDS IDENTIFICATION

- **Hazard risk classification:** The product is not classified according to the CLP regulation.
- **Label elements including precautionary statements**
 - **Symbol:** Void
 - **Single word:** Void
 - **Hazard risk statement:** Void
 - **Precautionary statement:**
 - Prevention: void
 - Response: void
 - Storage: void
- **Other hazard risk which are not included in the classification criteria (E.G. dust exposure hazard):** None

03 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	Content(%)	CAS.No.
Zirconium Dioxide	90-100	1314-23-4

04 FIRST AID MEASURES

- **Eye contact:**
Rinse opened eye for several minutes under running water.
If symptoms persist, consult a doctor.
- **Skin contact:**
Clean affected skin thoroughly with water and a mild cleansing agent.
No residues shall remain on the skin.
- **Inhalation**
If it is inhaled, supply fresh air; consult a doctor in case of complaints.
- **Ingestion**
Get emergency medical attention.
Spit out again.
If symptoms persist, consult doctor.
- **Indication of immediate medical attention and notes for physician**
Ensure medical personnel are aware of the material and take protective measures

05 FIREFIGHTING MEASURES

- **Suitable (and unsuitable) extinguishing media:**
The product is not combustible and does not support any combustion.
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- **Special hazards arising from the chemical**
No specific hazards known.
- **Special protective equipment and precautions for firefighters**
Rescuers should wear self-contained respiratory protective device.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

06 ACCIDENTAL RELEASE MEASURES

- **Personal precautions, protective equipment**
Avoid breathing dust, aerosol.
- **Environmental precautions and protective procedures:**
Do not allow product to reach sewage system or any water course.
Do not allow to penetrate the ground/soil.
- **Methods and material for containment and cleaning up:**
Keep in suitable, closed containers for disposal.

07 HANDLING AND STORAGE

- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace
Work with reference to engineering controls and personal protective equipment
- **Conditions for safe storage**
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
Store away from foodstuffs.
Store away from feed.

08 EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS (E.G. OCCUPATIONAL EXPOSURE LIMIT VALUES, BIOLOGICAL LIMIT VALUES)

- **RULES In Korea**
Zirconium dioxide TWA - 5 mg/m³
 STEL - 10 mg/m³
- **ACGIH RULES**
Zirconium dioxide TWA - 5 mg/m³
 STEL - 10 mg/m³
- **BIOLOGICAL LIMIT VALUES**
Zirconium dioxide No data
- **OTHER LIMIT VALUES**
Zirconium dioxide No data

APPROPRIATE ENGINEERING CONTROLS

If work produces dust or aerosol, ventilate to keep air pollution below exposure limit.

PERSONAL PROTECTIVE EQUIPMENT

- **Respiratory system protection**
Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
- **Eye protection:** Safety goggles
- **Hand protection:**
 - **Chemical resistant gloves (EN 374):**
For the protection against chemicals in areas with increased risk of injury (mechanical hazard) no recommendation for a suitable glove material can be given.
 - **Material of gloves:**
For undissolved solid substances following materials may be suitable: nitrile rubber (NBR), butyl rubber (BR), fluorocarbon rubber (FKM) and polychloroprene rubber (CR)
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
 - **Penetration time of glove material:**
The exact penetration time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Body protection:** Protective work clothing

09 PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance:**
 - **Physical state:** Powder
 - **Color:** Orange
- **Odor:** Odourless
- **Odor threshold:** No data
- **pH:** No data
- **Melting/ freezing point:**
2.700°C (Zirconium Dioxide)
- **Initial boiling point and range:**
5.000°C (Zirconium Dioxide)
- **Flash point:** No data
- **Evaporation rate:** No data
- **Flammability (solid, gas):**
Product does not present an explosion hazard.
- **Upper/ lower flammability or explosive limits:**
Not applicable / Not applicable
- **Vapor pressure:** No data
- **Solubility:** Insoluble
- **Vapor density:** No data
- **Relative density:** 5.85 g/cm³ at 25°C
- **Partition coefficient of n-Octanol/water:**
Not applicable
- **Auto-ignition temperature:**
Product is not self-igniting.
- **Decomposition temperature:** No data
- **Viscosity:** No data
- **Molecular weight:** No data

10 STABILITY AND REACTIVITY

- **Chemical stability and possibility of hazardous reactions**
Stable under recommended storage conditions.
- **Conditions to avoid** No data
- **Incompatible materials:** Strong oxidizing agents, Strong acids
- **Hazardous decomposition products:** No hazardous decomposition products if instructions for storage and handling are followed

11 TOXICOLOGICAL INFORMATION

- **Information on the likely routes of exposure:** No data
- **Health hazards information**
 - **Acute toxic:** No adverse effects known
 - **Skin corrosion/irritation:** No data
 - **Serious eye damage/irritation:** No data
 - **Respiratory sensitization:** No data
 - **Skin sensitization:** No data
 - **Carcinogenicity**
 - Occupational safety and health act in Korea: No data
 - Notice of Ministry of Employment and Labor in Korea: No data
 - IARC: No data
 - OSHA: No data
 - ACGIH: A4(Zirconium and compounds, as Zr)
 - NTP: No data
 - EU CLP: No data
 - **Germ-Cell mutagenicity:** Based on available data, the classification criteria are not met.
 - **Reproductive toxicity:** Based on available data, the classification criteria are not met.
 - **Specific target organ toxicity - single exposure:**
Based on available data, the classification criteria are not met.
 - **Specific target organ toxicity - repeated exposure:**
Based on available data, the classification criteria are not met.
 - **Aspiration hazard:** No data
 - **Other hazardous effects:** No data

12 ECOLOGICAL INFORMATION

- **Aquatic/ terrestrial ecotoxicity:** No further relevant information available
- **Persistence and degradability:** Inorganic product; not removable from water by biological cleaning process
- **Bioaccumulative potential:** No further relevant information available
- **Mobility in soil:** No further relevant information available
- **Other hazardous effects:** No further relevant information available

13 DISPOSAL CONSIDERATIONS

- **Disposal method:**
Disposal according to instructions of local authorities
- **Disposal precaution:**
Disposal according to instructions of local authorities

14 TRANSPORTATION INFORMATION

- **U.N. Number ADR, AND, IMDG, IATA:** Not regulated
- **U.N. Proper shipping name ADR, AND, IMDG, IATA:** Void
- **Transport Hazard class ADR, AND, IMDG, IATA:** Void
- **Packing group ADG, AND, IMDG, IATA:** Void
- **Marine pollution:** No data
- **Special precaution which a user to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises**
 - If cause fire: Not applicable
 - If cause leakage: Not applicable

15 REGULATORY INFORMATION

- **Occupational safety and health act in Korea:**
Harmful Agents Subject to Work Environment Monitoring (Measurement cycle : 6 Months)
Hazardous Substances Subject to Control
Substances Subject to Special medical examination(Examination cycle : 12 Months)
Threshold Limit Values (TLVs) chemicals are included.
- **Chemical control act in Korea:** Not applicable
- **Safety control of dangerous substances act in Korea:** Not applicable
- **Wastes control act in Korea:** Designated waste
- **Other regulations in Korea and abroad regulations**
 - **Korean regulation**
Persistent Organic Pollutants (POPs) Control Act: Not applicable
 - **Abroad Regulations**

OSHA regulation:	Not applicable	ROTTERDAM:	Not applicable
CERCLA regulation:	Not applicable	STOCKHOLM:	Not applicable
EPCRA 302 regulation:	Not applicable	MONTREAL:	Not applicable
EPCRA 304 regulation:	Not applicable		
EPCRA 313 regulation:	Not applicable		
 - **EU Classification (Classification):** Not applicable
 - **EU Classification (Risk Phrases):** Not applicable
 - **EU Classification (Safety Phrases):** Not applicable

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16 OTHER INFORMATION

- **Information source and references**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Issuing date:** 3/26/2018

- **Revision number and date**

- Revision number: 0
- Date

- **Others**

The information contained herein is to the best of our knowledge and belief accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee for result obtained, and assume no responsibility for damages incurred by use of this product. It is the responsibility of the user to comply with all federal, state and local laws and regulations.