SECTION 1: Identification

1.1. Identification
Product form: Mixture
Product name: Z-DOL
CAS-No.: Mixture
Product code: 5021
Other means of identification: Dolomite Burned Brick

1.2. Recommended use and restrictions on use
Use of the substance/mixture: Refractory
Use of the substance/mixture: Industrial

1.3. Supplier
Resco Products, Inc.
One Robinson Plaza, Suite 300
6600 Steubenville Pike
Pittsburgh, PA 15205 - United States
T 412-494-4491
SDS@RescoProducts.com
WWW.RescoProducts.com

1.4. Emergency telephone number
Emergency number: EMERGENCY ONLY (CHEMTREC) USA & Canada 1-800-424-9300
Outside USA & Canada +1 703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture
GHS-US classification
Skin corrosion/irritation Category 1A H314 Causes severe skin burns and eye damage
Carcinogenicity Category 1A H350 May cause cancer (Dust when sawing or tear out, Inhalation)

Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements
GHS US labeling
Hazard pictograms (GHS US):

Signal word (GHS US): Danger
Hazard statements (GHS US):
H314 - Causes severe skin burns and eye damage
H350 - May cause cancer (Dust when sawing or tear out, Inhalation)
Precautionary statements (GHS US):
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear Safety shoes, eye protection, protective gloves, protective clothing.
Avoid contact with the skin and the eyes
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
IF ON SKIN: Gently wash with plenty of soap and water.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P260 - Do not breathe Dust when sawing or tear out.

2.3. Other hazards which do not result in classification
Other hazards not contributing to the classification:
May release smoke when heated. Combustion products include carbon monoxide, carbon dioxide, and hydrocarbon vapors. Radioactivity: In common with many naturally occurring mineral products zirconia contains very low levels of naturally occurring radioactive elements, principally uranium, thorium and radium. The principal radiation hazard is due to inhalation of any dust, while a secondary lesser external hazard exists through gamma radiation.

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>calcium oxide</td>
<td>(CAS-No.) 1305-78-8</td>
<td>50 - 75</td>
<td>Skin Corr. 1A, H314</td>
</tr>
<tr>
<td>Magnesium Oxide</td>
<td>(CAS-No.) 1309-48-4</td>
<td>20 - 50</td>
<td>Not classified</td>
</tr>
<tr>
<td>Zirconia</td>
<td>(CAS-No.) 1314-23-4</td>
<td>1 - 5</td>
<td>Not classified</td>
</tr>
<tr>
<td>Wax, Bulk Liquid</td>
<td>(CAS-No.) 14464-46-1</td>
<td>1 - 5</td>
<td>Not classified</td>
</tr>
<tr>
<td>cristobalite</td>
<td>(CAS-No.)</td>
<td>1 - 5</td>
<td>Carc. 1A, H350</td>
</tr>
</tbody>
</table>
Full text of hazard classes and H-statements: see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures
First-aid measures general: Get medical advice/attention if you feel unwell.
First-aid measures after inhalation: Dust when sawing or tear out. Remove the victim into fresh air.
First-aid measures after skin contact: Gently wash with plenty of soap and water.
First-aid measures after eye contact: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion: Do NOT induce vomiting. Rinse mouth.

4.2. Most important symptoms and effects (acute and delayed)
Symptoms/effects after skin contact: May cause moderate irritation.
Symptoms/effects after eye contact: Causes serious eye irritation.

4.3. Immediate medical attention and special treatment, if necessary
No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media
Suitable extinguishing media: Carbon dioxide. Dry powder. Dry sand.
Unsuitable extinguishing media: Do not use extinguishing media containing water.

5.2. Specific hazards arising from the chemical
Fire hazard: Reactions involving a fire hazard: see "Reactivity Hazard". Fire conditions may produce carbon dioxide-carbon monoxide.

5.3. Special protective equipment and precautions for fire-fighters
Firefighting instructions: When cooling/extinguishing: no water in the substance.
Protection during firefighting: Do not attempt to take action without suitable protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
6.1.1. For non-emergency personnel
Emergency procedures: Avoid contact with skin and eyes.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment.

6.2. Environmental precautions
No additional information available

6.3. Methods and material for containment and cleaning up
For containment: On land, sweep or shovel into suitable containers. Methods for cleaning up: Collect spillage.

6.4. Reference to other sections
No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Avoid contact with eyes. Contact lenses should be removed.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store this product in a dry location where it can be protected from the elements. Protect from moisture.
Incompatible products: Acids; reactive fluoridated, brominated, or phosphorous compounds; aluminum (may form hydrogen gas); reactive metals; organic acid anhydrides; nitro-organic compounds; interhalogenated compounds.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Substance</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Oxide (1309-48-4)</td>
<td></td>
<td>10 mg/m³ (Magnesium oxide; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Inhalable fraction)</td>
</tr>
<tr>
<td>calcium oxide (1305-78-8)</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>cristobalite (14464-46-1)</td>
<td></td>
<td>0.025 mg/m³ (Silica-Crystalline Cristobalite; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Respirable fraction)</td>
</tr>
<tr>
<td></td>
<td>ACGIH TWA (mg/m³)</td>
<td>0.05 mg/m³ respirable dust</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td></td>
</tr>
</tbody>
</table>
Z-DOL
Safety Data Sheet

Zirconia (1314-23-4)

<table>
<thead>
<tr>
<th></th>
<th>ACGIH ACGIH TWA (mg/m³)</th>
<th>OSHA OSHA PEL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5 mg/m³ As Zr</td>
</tr>
<tr>
<td>Wax, Bulk Liquid</td>
<td></td>
<td>5 mg/m³ As Zr</td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls
No additional information available

8.3. Individual protection measures/Personal protective equipment
No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state: Solid
- Appearance: Solid in various shapes.
- Color: brown
- Odor: odorless
- Odor threshold: No data available
- pH: No data available
- Melting point: > 2500 °F
- Freezing point: No data available
- Boiling point: No data available
- Flash point: No data available
- Relative evaporation rate (butyl acetate=1): No data available
- Flammability (solid, gas): No data available
- Vapor pressure: No data available
- Relative vapor density at 20 °C: No data available
- Relative density: 2.8 - 2.9
- Solubility: Reacts with water to form Ca(OH)2, Mg(OH)2, and heat.
- Log Pow: No data available
- Auto-ignition temperature: No data available
- Decomposition temperature: No data available
- Viscosity, kinematic: No data available
- Viscosity, dynamic: No data available
- Explosion limits: No data available
- Explosive properties: No data available
- Oxidizing properties: No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
Reacts exothermically with water (moisture). Reacts with water to form Ca(OH)2, Mg(OH)2, and heat. Reacts with acids to form calcium salts while generating heat.

10.2. Chemical stability
No additional information available

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid
Water, humidity.

10.5. Incompatible materials
Acids.

10.6. Hazardous decomposition products
Thermal decomposition generates: Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
- Acute toxicity (oral): Not classified
- Acute toxicity (dermal): Not classified
- Acute toxicity (inhalation): Not classified
**Magnesium Oxide (1309-48-4)**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>&gt; 5000 mg/kg (Rat; Literature study)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 2000 mg/kg body weight (Rabbit; Literature study)</td>
</tr>
</tbody>
</table>

**Calcium Oxide (1305-78-8)**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>&gt; 2000 mg/kg body weight (OECD 425: Acute Oral Toxicity: Up-and-Down Procedure, Rat, Female, Experimental value)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 2500 mg/kg body weight (EU Method B.3: Acute toxicity (dermal), 24 h, Rabbit, Male/female, Experimental value)</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**

Causes severe skin burns and eye damage.

**Serious eye damage/irritation**

Eye damage, category 1, implicit

**Respiratory or skin sensitization**

Not classified

**Germ cell mutagenicity**

Not classified

**Carcinogenicity**

May cause cancer (Dust when sawing or tear out, Inhalation).

**Cristobalite (14464-46-1)**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IARC group</td>
<td>1 - Carcinogenic to humans</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**

Not classified

**Specific target organ toxicity – single exposure**

Not classified

**Specific target organ toxicity – repeated exposure**

Not classified

**Aspiration hazard**

Not classified

**Viscosity, kinematic**

No data available

**Symptoms/effects after skin contact**

May cause moderate irritation.

**Symptoms/effects after eye contact**

Causes serious eye irritation.

### SECTION 12: Ecological information

#### 12.1. Toxicity

**Magnesium Oxide (1309-48-4)**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 Daphnia 1</td>
<td>500-665, TLM; 96 h; Mysidacea</td>
</tr>
</tbody>
</table>

**Calcium Oxide (1305-78-8)**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>&gt;= 1070 mg/l (Equivalent or similar to OECD 203, 96 h, Cyprinus carpio, Static system, Fresh water, Experimental value)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>&gt;= 159.6 mg/l (EPA OPP 72-2, 24 h, Crustacea, Static system, Fresh water, Experimental value)</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

**Magnesium Oxide (1309-48-4)**

- Persistence and degradability: Biodegradability: not applicable. No (test) data on mobility of the substance available.
- ThOD: Not applicable (inorganic)

**Calcium Oxide (1305-78-8)**

- Persistence and degradability: Biodegradability: not applicable.
- Biochemical oxygen demand (BOD): Not applicable (inorganic)
- Chemical oxygen demand (COD): Not applicable (inorganic)
- ThOD: Not applicable (inorganic)

**Cristobalite (14464-46-1)**

- Persistence and degradability: Biodegradability: not applicable.
- Biochemical oxygen demand (BOD): Not applicable
- Chemical oxygen demand (COD): Not applicable
- ThOD: Not applicable

#### 12.3. Bioaccumulative potential

**Magnesium Oxide (1309-48-4)**

Bioaccumulative potential: Biaccumulation: not applicable.

**Calcium Oxide (1305-78-8)**

Bioaccumulative potential: Not bioaccumulative.

**Cristobalite (14464-46-1)**

Bioaccumulative potential: No test data available.

#### 12.4. Mobility in soil

**Calcium Oxide (1305-78-8)**

Ecology - soil: No (test) data on mobility of the substance available.
12.5. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods
No additional information available

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Not regulated
Transportation of Dangerous Goods
Not regulated
Transport by sea
Not regulated
Air transport
Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations
All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wax, Bulk Liquid</td>
<td>1-5%</td>
</tr>
</tbody>
</table>

15.2. International regulations

CANADA
No additional information available

calcium oxide (1305-78-8)
Listed on the Canadian DSL (Domestic Substances List)
cristobalite (14464-46-1)
Listed on the Canadian DSL (Domestic Substances List)
Zirconia (1314-23-4)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations
No additional information available

National regulations
No additional information available

15.3. US State regulations

Z-DOL (Mixture)

<table>
<thead>
<tr>
<th>Component</th>
<th>State or local regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Oxide(1309-48-4)</td>
<td>U.S. - New Jersey - Right to Know Hazardous Substance List</td>
</tr>
<tr>
<td>calcium oxide(1305-78-8)</td>
<td>U.S. - New Jersey - Right to Know Hazardous Substance List</td>
</tr>
<tr>
<td>cristobalite(14464-46-1)</td>
<td>U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List, U.S. - Pennsylvania - RTK (Right to Know) List</td>
</tr>
</tbody>
</table>

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 04/01/2019
Other information: Report language name. English. In the event of any conflict between English and other language versions, the English version shall prevail.

Full text of H-phrases:

H314 Causes severe skin burns and eye damage
H350 May cause cancer

SDS US (GHS HazCom 2012)
This information and recommendations set forth herein are taken from sources believed to be accurate as of the date herein, however, Resco Products, Inc. makes no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assumes no liability to any user thereof.