SECTION 1: Identification

1.1. Identification
Product form : Mixture
Product name : EZ Est 60 ZG
CAS-No. : Mixture
Product code : 4015
Other means of identification : Dry Additive for Gel Bonded Castable

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

1.3. Supplier
Resco Products, Inc.
One Robinson Plaza, Suite 300
6600 Steubenville Pike
Pittsburgh, PA 15205 - United States
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 2
Serious eye damage/eye irritation Category 2B
Carcinogenicity Category 1A

H315 Causes skin irritation
H320 Causes eye irritation
H350 May cause cancer (Inhalation)

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements
GHS US labeling
Signal word (GHS US) : Danger
Hazard pictograms (GHS US) :
Hazard statements (GHS US) : H315 - Causes skin irritation
H320 - Causes eye irritation
H350 - May cause cancer (Inhalation)
Precautionary statements (GHS US) :
P280 - Wear eye protection, protective gloves.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P260 - Do not breathe the dust.

2.3. Other hazards which do not result in classification
Other hazards not contributing to the classification : Radioactivity: In common with many naturally occurring mineral products, zircon 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. Zircon typically exhibits a total specific activity of 90-110 pCi/g. This product contains a dust suppression admixture, that may give off smoke or fumes during initial heat up. These fumes include carbon monoxide, carbon dioxide, and hydrocarbons. Adequate ventilation and appropriate respiratory protection may be required.

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>aluminium oxide, non-fibrous</td>
<td>(CAS-No.) 1344-28-1</td>
<td>10 – 20</td>
<td>Not classified</td>
</tr>
<tr>
<td>zircon</td>
<td>(CAS-No.) 14940-68-2</td>
<td>5 – 10</td>
<td>Not classified</td>
</tr>
<tr>
<td>quartz</td>
<td>(CAS-No.) 14808-60-7</td>
<td>1 – 5</td>
<td>Carc. 1A, H350</td>
</tr>
<tr>
<td>cristobalite</td>
<td>(CAS-No.) 14464-46-1</td>
<td>0.1 – 0.5</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 : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Rinse with 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.
First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.
Symptoms/effects after inhalation : May cause cancer by inhalation. Danger of serious damage to health by prolonged exposure through inhalation.
Symptoms/effects after skin contact : Causes skin irritation.
Symptoms/effects after eye contact : Causes 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 : Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media : In case of fire, all extinguishing media allowed.

5.2. Specific hazards arising from the chemical

Fire hazard : Not flammable.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Fight fire with normal precautions from a reasonable distance.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.
Other information : This product contains a dust suppression admixture, that may give off smoke or fumes during initial heat up. These fumes include carbon monoxide, carbon dioxide, and hydrocarbons. Adequate ventilation and appropriate respiratory protection may be required.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Do not breathe dust.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Ventilate area.

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.
Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Avoid raising dust. Avoid contact with skin and eyes. Do not breathe dust.
Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a dry place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>EZ Est 60 ZG (Mixture)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No additional information available</td>
</tr>
<tr>
<td>aluminium oxide, non-fibrous (1344-28-1)</td>
</tr>
<tr>
<td>USA - ACGIH - Occupational Exposure Limits</td>
</tr>
<tr>
<td>ACGIH TWA (mg/m³) : 1 mg/m³ respirable dust</td>
</tr>
<tr>
<td>cristobalite (14464-46-1)</td>
</tr>
<tr>
<td>USA - ACGIH - Occupational Exposure Limits</td>
</tr>
<tr>
<td>ACGIH TWA (mg/m³) : 0.025 mg/m³ respirable dust</td>
</tr>
<tr>
<td>USA - OSHA - Occupational Exposure Limits</td>
</tr>
<tr>
<td>OSHA PEL (TWA) (mg/m³) : 0.05 mg/m³ respirable dust</td>
</tr>
</tbody>
</table>
### zircon (14940-68-2)

**USA - ACGIH - Occupational Exposure Limits**

| ACGIH TWA (mg/m³) | 5 mg/m³ As Zr |

**USA - OSHA - Occupational Exposure Limits**

| OSHA PEL (TWA) (mg/m³) | 5 mg/m³ As Zr |

### quartz (14808-60-7)

**USA - ACGIH - Occupational Exposure Limits**

| ACGIH TWA (mg/m³) | 0.025 mg/m³ (Silica-Crystalline Quartz; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Respirable fraction) |

**USA - OSHA - Occupational Exposure Limits**

| Local name | Silica, crystalline quartz, respirable dust |

| OSHA PEL (TWA) (mg/m³) | 0.05 mg/m³ respirable dust |

| Remark (OSHA) | (3) See Table Z-3. |

#### 8.2. Appropriate engineering controls

**Appropriate engineering controls:**

Provide adequate ventilation to minimize dust concentrations.

#### 8.3. Individual protection measures/Personal protective equipment

**Personal protective equipment:**

Avoid all unnecessary exposure.

- **Hand protection:**
  - Wear protective gloves.

- **Eye protection:**
  - Chemical goggles or safety glasses

- **Skin and body protection:**
  - Wear suitable protective clothing

- **Respiratory protection:**
  - Wear appropriate mask

**Other information:**

Do not eat, drink or smoke during use.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

- **Physical state:** Solid

- **Appearance:** Granular mixture.

- **Color:** Light gray

- **Odor:** earthy

- **Odor threshold:** Not applicable

- **pH:** No data available

- **Melting point:** > 2000 °F

- **Freezing point:** Not applicable

- **Boiling point:** Not applicable

- **Critical temperature:** Not applicable

- **Critical pressure:** Not applicable

- **Flash point:** Not applicable

- **Relative evaporation rate (butyl acetate=1):** Not applicable

- **Relative evaporation rate (ether=1):** Not applicable

- **Flammability (solid, gas):** Non flammable.

- **Vapor pressure:** Not Applicable

- **Vapor pressure at 50 °C:** Not Applicable

- **Relative vapor density at 20 °C:** No data available

- **Relative density:** No data available

- **Solubility:** Insoluble in water.

- **Partition coefficient n-octanol/water (Log Pow):** No data available

- **Auto-ignition temperature:** Not applicable

- **Decomposition temperature:** No data available

- **Viscosity, kinematic:** No data available

- **Viscosity, dynamic:** Not Applicable

- **Explosion limits:** Not applicable

- **Explosive properties:** No data available
### EZ Est 60 ZG

**Safety Data Sheet**

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

| Oxidizing properties | : No data available |

### 9.2 Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

None known.

#### 10.2 Chemical stability

Stable under normal conditions.

#### 10.3 Possibility of hazardous reactions

Not established.

#### 10.4 Conditions to avoid

Avoid dust formation.

#### 10.5 Incompatible materials

No additional information available

#### 10.6 Hazardous decomposition products

No additional information available

### 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 |

**aluminium oxide, non-fibrous (1344-28-1)**

| LD50 oral rat | > 15900 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral) |
| LC50 Inhalation - Rat | 7.6 mg/l air (Equivalent or similar to OECD 403, 1 h, Rat, Male, Experimental value, Inhalation (aerosol)) |

**Skin corrosion/irritation**

: Causes skin irritation.

**Serious eye damage/irritation**

: Causes eye irritation.

**Respiratory or skin sensitization**

: Not classified

**Germ cell mutagenicity**

: Not classified

**Carcinogenicity**

: May cause cancer (Inhalation).

**quartz (14808-60-7)**

| IARC group | 1 - Carcinogenic to humans |
| 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 | : Not data available |
| Likely routes of exposure | : Inhalation |
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met |
| Symptoms/effects after inhalation | : May cause cancer by inhalation. Danger of serious damage to health by prolonged exposure through inhalation |
| Symptoms/effects after skin contact | : Causes skin irritation |
| Symptoms/effects after eye contact | : Causes eye irritation |

### SECTION 12: Ecological information

#### 12.1 Toxicity

No additional information available

#### 12.2 Persistence and degradability

| EZ Est 60 ZG (Mixture)  | : Not established |
| aluminium oxide, non-fibrous (1344-28-1) | : Not applicable |
| Chemical oxygen demand (COD) | : Not applicable |
| ThOD | : Not applicable |

<p>| cristobalite (14464-46-1) | : Mineral. Not applicable |
| Chemical oxygen demand (COD) | : Not applicable |
| ThOD | : Not applicable |
| BOD (% of ThOD) | : Not applicable |</p>
<table>
<thead>
<tr>
<th>Substance</th>
<th>Persistence and degradability</th>
<th>Bioaccumulative potential</th>
<th>Other adverse effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>zircon (14940-68-2)</td>
<td>Not established.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>quartz (14808-60-7)</td>
<td>Not applicable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminium oxide, non-fibrous (1344-28-1)</td>
<td>No data available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cristobalite (14464-46-1)</td>
<td>No data available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zircon (14940-68-2)</td>
<td>Not data available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quartz (14808-60-7)</td>
<td>Not established.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 12.3. Bioaccumulative potential

**EZ Est 60 ZG (Mixture)**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium oxide, non-fibrous (1344-28-1)</td>
<td>Not established.</td>
</tr>
<tr>
<td>Cristobalite (14464-46-1)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Zircon (14940-68-2)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Quartz (14808-60-7)</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

### 12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Substance</th>
<th>Ecology - soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium oxide, non-fibrous (1344-28-1)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Cristobalite (14464-46-1)</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

### 12.5. Other adverse effects

- Effect on the global warming: None known
- Other information: No other effects known.

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

- **Product/Packaging disposal recommendations**: Dispose in a safe manner in accordance with local/national regulations.
- **Ecology - waste materials**: Avoid release to the environment.

### SECTION 14: Transport information

- **Department of Transportation (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

**EZ Est 60 ZG (Mixture)**

- All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Not subject to reporting requirements of the United States SARA Section 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium oxide, non-fibrous (1344-28-1)</td>
<td>Note: The section 313 chemical list contains &quot;CAS # 1344-28-1 Aluminum Oxide (Fibrous forms)&quot;; the Aluminum oxide contained in this product is non-fibrous, and thus is not a section 313 material. Only manufacturing, processing, or otherwise use of aluminum oxide in the fibrous form triggers reporting.</td>
</tr>
</tbody>
</table>

#### 15.2. International regulations

**CANADA**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Listed on the Canadian DSL (Domestic Substances List)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium oxide, non-fibrous (1344-28-1)</td>
<td></td>
</tr>
</tbody>
</table>
**EU-Regulations**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Listed on the Canadian DSL (Domestic Substances List)</th>
</tr>
</thead>
<tbody>
<tr>
<td>cristobalite</td>
<td>Listed on the Canadian DSL (Domestic Substances List)</td>
</tr>
<tr>
<td>zircon</td>
<td>Listed on the Canadian DSL (Domestic Substances List)</td>
</tr>
</tbody>
</table>

**National regulations**

**quartz (14808-60-7)**

Listed on IARC (International Agency for Research on Cancer)

**15.3. US State regulations**

**EZ Est 60 ZG (Mixture)**

<table>
<thead>
<tr>
<th>component</th>
<th>State or local regulations</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>aluminium oxide, non-fibrous (1344-28-1)</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>
<tr>
<td>Quartz (14808-60-7)</td>
<td>U.S. - New Jersey - Right to Know Hazardous Substance List</td>
</tr>
</tbody>
</table>

**SECTION 16: Other information**

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-Phrase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H320</td>
<td>Causes eye irritation</td>
</tr>
<tr>
<td>H350</td>
<td>May cause cancer</td>
</tr>
</tbody>
</table>

SDS US (GHS HazCom 2012)

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