SECTION 1: Identification

1.1. Identification
Product form: Mixture
Product name: EZ Cubed AZS
CAS-No.: Mixture
Product code: 7326
Other means of identification: Alumina-Silicate Cement 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 H315 - Causes skin irritation
Serious eye damage/eye irritation Category 2B H320 - Causes eye irritation
Carcinogenicity Category 1A H350 - May cause cancer (Inhalation)

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

Signal word (GHS US): Danger
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, Dust respirator, protective gloves.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P260 - Do not breathe 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 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>Zirconia</td>
<td>(CAS-No.) 1314-23-4</td>
<td>10 – 20</td>
<td>Not classified</td>
</tr>
<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>Calcium Aluminate Cement</td>
<td>(CAS-No.) 65997-16-2</td>
<td>5 – 10</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2B, H320</td>
</tr>
<tr>
<td>silicon carbide</td>
<td>(CAS-No.) 409-21-2</td>
<td>5 – 10</td>
<td>Carc. 1B, 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**

Allow affected person to breathe fresh air. Allow the victim to rest.

**First-aid measures after skin contact**

Wash with plenty of soap and water. Wash contaminated clothing before reuse.

**First-aid measures after ingestion**

Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

<table>
<thead>
<tr>
<th>Symptoms/effects after inhalation</th>
<th>May cause cancer by inhalation. Danger of serious damage to health by prolonged exposure through inhalation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms/effects after skin contact</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Symptoms/effects after eye contact</td>
<td>Causes eye irritation.</td>
</tr>
</tbody>
</table>

### 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.

## 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

Prevent entry to sewers and public waters.

### 6.3. Methods and material for containment and cleaning up

**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 this product in a dry location where it can be protected from the elements. Strong bases. Strong acids.

### 8.1. Control parameters

#### EZ Cubed AZS (Mixture)

No additional information available

#### Calcium Aluminate Cement (65997-16-2)

No additional information available

#### silicon carbide (409-21-2)

**USA - ACGIH - Occupational Exposure Limits**

| ACGIH TWA (mg/m³) | 3 mg/m³ (Silicon carbide, nonfibrous; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Respirable fraction. The value is for particulate matter containing no asbestos and < 1% crystalline silica. |

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

**USA - ACGIH - Occupational Exposure Limits**

| ACGIH TWA (mg/m³) | 1 mg/m³ respirable dust |
**Zirconia (1314-23-4)**

<table>
<thead>
<tr>
<th>USA - ACGIH - Occupational Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH TWA (mg/m³)</td>
</tr>
<tr>
<td>5 mg/m³ As Zr</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USA - OSHA - Occupational Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSHA PEL (TWA) (mg/m³)</td>
</tr>
<tr>
<td>5 mg/m³ As Zr</td>
</tr>
</tbody>
</table>

**cristobalite (14464-46-1)**

<table>
<thead>
<tr>
<th>USA - ACGIH - Occupational Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH TWA (mg/m³)</td>
</tr>
<tr>
<td>0.025 mg/m³ respirable dust</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USA - OSHA - Occupational Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSHA PEL (TWA) (mg/m³)</td>
</tr>
<tr>
<td>0.05 mg/m³ respirable dust</td>
</tr>
</tbody>
</table>

### 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

### 9.3. 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: > 2500 °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: ≈ 3
- Solubility: Slightly soluble.
- 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
- Oxidizing properties: No data available

#### 9.2. Other information

No additional information available
**SECTION 10: Stability and reactivity**

10.1. **Reactivity**
Hydraulic setting.

10.2. **Chemical stability**
Stable under normal conditions of use.

10.3. **Possibility of hazardous reactions**
Not established.

10.4. **Conditions to avoid**
Avoid dust formation.

10.5. **Incompatible materials**
Strong acids. Strong bases.

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

**silicon carbide (409-21-2)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>&gt; 2000 mg/kg body weight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral)</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
<td>&gt; 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>&gt; 15900 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral)</td>
</tr>
<tr>
<td>LC50 Inhalation - Rat</td>
<td>7.6 mg/l air (Equivalent or similar to OECD 403, 1 h, Rat, Male, Experimental value, Inhalation (aerosol))</td>
</tr>
</tbody>
</table>

- 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).

**silicon carbide (409-21-2)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IARC group</td>
<td>2A - Probably carcinogenic to humans</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity – single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity – repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Potential Adverse human health effects and symptoms</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
</tbody>
</table>

- 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 Cubed AZS (Mixture)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Not established.</td>
</tr>
</tbody>
</table>

**silicon carbide (409-21-2)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable.</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>cristobalite (14464-46-1)</td>
<td>Not established.</td>
</tr>
<tr>
<td>silicon carbide (409-21-2)</td>
<td>Bioaccumulation: not applicable.</td>
</tr>
<tr>
<td>aluminium oxide, non-fibrous (1344-28-1)</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

**Mobility in soil**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Ecological data</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>

**Other adverse effects**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect on the global warming</td>
<td>None known</td>
</tr>
</tbody>
</table>

**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.

**Transport information**

- **Department of Transportation (DOT)**
  - Not regulated
- **Transportation of Dangerous Goods**
  - Not regulated
- **Transport by sea**
  - Not regulated
- **Air transport**
  - Not regulated

**Regulatory information**

15.1. **US Federal regulations**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZ Cubed AZS (Mixture)</td>
<td>All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory</td>
</tr>
<tr>
<td>aluminium oxide, non-fibrous (1344-28-1)</td>
<td>Not subject to reporting requirements of the United States SARA Section 313</td>
</tr>
</tbody>
</table>

- **Note**: The section 313 chemical list contains “CAS # 1344-28-1 Aluminum Oxide (Fibrous forms)”; 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.

15.2. **International regulations**

**CANADA**

- **Calcium Aluminate Cement (65997-16-2)**
  - Listed on the Canadian DSL (Domestic Substances List)
- **silicon carbide (409-21-2)**
  - Listed on the Canadian DSL (Domestic Substances List)
- **aluminium oxide, non-fibrous (1344-28-1)**
  - Listed on the Canadian DSL (Domestic Substances List)
**Zirconia (1314-23-4)**
Listed on the Canadian DSL (Domestic Substances List)

**cristobalite (14464-46-1)**
Listed on the Canadian DSL (Domestic Substances List)

### EU-Regulations
No additional information available

### National regulations

**silicon carbide (409-21-2)**
Listed on IARC (International Agency for Research on Cancer)

### 15.3. US State regulations

**EZ Cubed AZS (Mixture)**

<table>
<thead>
<tr>
<th>Component</th>
<th>U.S. - California - Proposition 65 - Other information</th>
<th>U.S. - California - Proposition 65 - Developmental Toxicity</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>No significant risk level (NSRL)</th>
<th>Maximum allowable dose level (MADL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>silicon carbide (409-21-2)</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aluminium oxide, non-fibrous (1344-28-1)</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cristobalite (14464-46-1)</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 16: Other information

**This product contains crystalline silica, a chemical known to the state of California to cause cancer. For more information go to WWW.P65Warnings.ca.gov**

Full text of H-phrases:

- **H315**: Causes skin irritation
- **H320**: Causes eye irritation
- **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.