SECTION 1: Identification

1.1. Identification

Product form: Mixture
Product name: R-Max CZ
CAS-No.: 8638
Product code: 
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)

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 statements (GHS US):
- H315 - Causes skin irritation
- H320 - Causes eye irritation
- H350 - May cause cancer (Inhalation)

Precautionary statements (GHS US):
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
- P337+P313 - If eye irritation persists: Get medical advice/attention.
- P332+P313 - If skin irritation occurs: Get medical advice/attention.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.

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.

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>aluminum oxide, non-fibrous</td>
<td>(CAS-No.) 1344-28-1</td>
<td>20 – 50</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</td>
</tr>
<tr>
<td>kristobalite</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 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. Obtain emergency medical attention.

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: Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

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.

Incompatible products: Strong bases. Strong acids.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| R-Max CZ (Mixture)              | No additional information available |
| Calcium Aluminate Cement (65997-16-2) | No additional information available |
| cristobalite (14464-46-1)      |                                  |
| USA - ACGIH - Occupational Exposure Limits | ACGIH TWA (mg/m³) | 0.025 mg/m³ respirable dust |
| USA - OSHA - Occupational Exposure Limits | OSHA PEL (TWA) (mg/m³) | 0.05 mg/m³ respirable dust |
aluminium oxide, non-fibrous (1344-28-1)
USA - ACGIH - Occupational Exposure Limits

| ACGIH TWA (mg/m³) | 1 mg/m³ respirable dust |

8.2. Appropriate engineering controls
Appropriate engineering controls: Provide adequate ventilation to minimize dust concentrations.

8.3. Individual protection measures
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 |
| 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 | No data available |
| Vapor pressure at 50 °C | Not Applicable |
| Relative vapor density at 20 °C | No data available |
| Relative density | No data available |
| Solubility | Slightly soluble 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 | No data available |
| 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

**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
- Carcinogenicity: May cause cancer (Inhalation).
- Reproductive toxicity: Not classified
- STOT-single exposure: Not classified
- STOT-repeated exposure: Not classified
- Aspiration hazard: Not classified
- Viscosity, kinematic: No data available

Potential Adverse human health effects and symptoms

- 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

**R-Max CZ (Mixture)**

- Persistence and degradability: Not established.

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

- Persistence and degradability: Mineral. Not applicable.
- Chemical oxygen demand (COD): Not applicable
- ThOD: Not applicable
- BOD (% of ThOD): Not applicable

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

- Persistence and degradability: Not applicable.
- Chemical oxygen demand (COD): Not applicable
- ThOD: Not applicable

12.3. Bioaccumulative potential

**R-Max CZ (Mixture)**

- Bioaccumulative potential: Not established.

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

- Bioaccumulative potential: No data available.

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

- Bioaccumulative potential: No data available.

12.4. Mobility in soil

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

- Ecology - soil: No data available.

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

- Ecology - soil: No data available.

12.5. Other adverse effects

Effect on the global warming: None known

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations: Dispose in a safe manner in accordance with local/national regulations.
R-Max CZ
Safety Data Sheet

Ecology - waste materials: Avoid release to the environment.

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
R-Max CZ (Mixture)
All components of this product are listed as Active, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory
aluminium oxide, non-fibrous (1344-28-1)
Not subject to reporting requirements of the United States SARA Section 313
Note: 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)
cristobalite (14464-46-1)
Listed on the Canadian DSL (Domestic Substances List)
aluminium oxide, non-fibrous (1344-28-1)
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
R-Max CZ (Mixture)
U.S. - California - Proposition 65 - 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

cristobalite (14464-46-1)
U.S. - California - Proposition 65 - Carcinogens List
U.S. - California - Propensity 65 - Developmental Toxicity
U.S. - California - Propensity 65 - Reproductive Toxicity - Female
U.S. - California - Propensity 65 - Reproductive Toxicity - Male
No significant risk level (NSRL)
Maximum allowable dose level (MADL)

Component
Cristobalite (14464-46-1) Yes No No No
aluminium oxide, non-fibrous (1344-28-1) Yes No No No

SECTION 16: Other information
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Revision date: 09/13/2021
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:

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.