



R-Max Z PC QT

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 6/1/2015 Revision date: 9/19/2024 Supersedes: 10/4/2021

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : R-Max Z PC QT
CAS-No. : Mixture
Product code : 8924
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
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 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

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 which do not result in 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)

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | GHS US classification |
|------------------------------|--------------------|---------|-----------------------|
| aluminium oxide, non-fibrous | CAS-No.: 1344-28-1 | 50 – 75 | Not classified |

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| Name | Product identifier | % | GHS US classification |
|--------------------------|---------------------|---------|--|
| Calcium Aluminate Cement | CAS-No.: 65997-16-2 | 5 – 10 | Skin Irrit. 2, H315 Eye Irrit. 2B, H320 |
| zircon | CAS-No.: 14940-68-2 | 5 – 10 | Not classified |
| quartz | CAS-No.: 14808-60-7 | 1 – 5 | Carc. 1A, H350 |
| crystalite | CAS-No.: 14464-46-1 | 0.5 – 1 | Carc. 1A, H350 |

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 | : 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. |
| 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 | : Danger of serious damage to health by prolonged exposure through inhalation. |
| Symptoms/effects after inhalation | : Danger of serious damage to health by prolonged exposure through inhalation. May cause cancer by 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. 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. Avoid contact with skin and eyes. |
|----------------------|--|

6.1.2. For emergency responders

| | |
|----------------------|--|
| Protective equipment | : Equip cleanup crew with proper protection. |
| Emergency procedures | : Ventilate area. On land, sweep or shovel into suitable containers. |

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. |

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

R-Max Z PC QT (Mixture)

No additional information available

Calcium Aluminate Cement (65997-16-2)

No additional information available

crystalite (14464-46-1)

USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA 0.025 mg/m³ respirable dust

USA - OSHA - Occupational Exposure Limits

OSHA PEL (TWA) [1] 0.05 mg/m³ respirable dust

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

USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA 1 mg/m³ respirable dust

zircon (14940-68-2)

USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA 5 mg/m³ As Zr

USA - OSHA - Occupational Exposure Limits

OSHA PEL (TWA) [1] 5 mg/m³ As Zr

quartz (14808-60-7)

USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA 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) [1] 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 | : No data available |
| pH | : ≈ 10.5 |
| pH solution concentration | : 10 % |
| Melting point | : > 2000 °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 |

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| | |
|---|---------------------|
| Flammability (solid, gas) | : Not flammable. |
| Vapor pressure | : No data available |
| Relative vapor density at 20°C | : No data available |
| Relative density | : No data available |
| Solubility | : Slightly soluble. |
| Partition coefficient n-octanol/water (Log Pow) | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Viscosity, kinematic | : Not Applicable |
| 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

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, 14 day(s)) |
| LC50 Inhalation - Rat | > 2.3 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s)) |

Skin corrosion/irritation : Causes skin irritation.
pH: ≈ 10.5

Calcium Aluminate Cement (65997-16-2)

pH ≤ 13

cristobalite (14464-46-1)

pH 6 – 7

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

pH 9 – 10.5 (aqueous suspension, 33 %)

quartz (14808-60-7)

pH 6 – 7

Serious eye damage/irritation : Causes eye irritation.
pH: ≈ 10.5

Calcium Aluminate Cement (65997-16-2)

pH ≤ 13

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cristobalite (14464-46-1)

| | |
|----|-------|
| pH | 6 – 7 |
|----|-------|

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

| | |
|----|-------------------------------------|
| pH | 9 – 10.5 (aqueous suspension, 33 %) |
|----|-------------------------------------|

quartz (14808-60-7)

| | |
|----|-------|
| pH | 6 – 7 |
|----|-------|

| | |
|-----------------------------------|----------------------------------|
| 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 |
| STOT-single exposure | : Not classified |
| STOT-repeated exposure | : Not classified |
| Aspiration hazard | : Not classified |
| Viscosity, kinematic | : Not Applicable |

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

| | |
|----------------------|------------------------|
| Viscosity, kinematic | Not applicable (solid) |
|----------------------|------------------------|

| | |
|---|--|
| Potential Adverse human health effects and symptoms | : Danger of serious damage to health by prolonged exposure through inhalation. |
| Symptoms/effects after inhalation | : Danger of serious damage to health by prolonged exposure through inhalation. May cause cancer by inhalation. |
| Symptoms/effects after skin contact | : Causes skin irritation. |
| Symptoms/effects after eye contact | : Causes eye irritation. |

SECTION 12: Ecological information

12.1. Toxicity

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

| | |
|-----------------|---|
| LC50 - Fish [1] | > 100 mg/l (96 h, Salmo trutta, Literature study) |
|-----------------|---|

| | |
|----------------------|--|
| EC50 - Crustacea [1] | > 100 mg/l (48 h, Daphnia magna, Literature study) |
|----------------------|--|

12.2. Persistence and degradability

R-Max Z PC QT (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 |
|------|----------------|

zircon (14940-68-2)

| | |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |
|-------------------------------|------------------|

quartz (14808-60-7)

| | |
|-------------------------------|-----------------|
| Persistence and degradability | Not applicable. |
|-------------------------------|-----------------|

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| quartz (14808-60-7) | |
|---------------------------------|----------------|
| Biochemical oxygen demand (BOD) | Not applicable |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |

12.3. Bioaccumulative potential

| R-Max Z PC QT (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. |

| zircon (14940-68-2) | |
|----------------------------|------------------|
| Bioaccumulative potential | Not established. |

| quartz (14808-60-7) | |
|----------------------------|--------------------|
| 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) | |
|---|-------------------------------------|
| Surface tension | No data available in the literature |
| 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.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

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 present and listed as Active 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. |

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15.2. International regulations

CANADA

Calcium Aluminate Cement (65997-16-2)

Listed on the Canadian DSL (Domestic Substances List)

crystalite (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)

zircon (14940-68-2)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

quartz (14808-60-7)

Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

R-Max Z PC QT (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 |
|--|--|

crystalite (14464-46-1)

| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significant risk level (NSRL) | Maximum allowable dose level (MADL) |
|---|---|---|---|----------------------------------|-------------------------------------|
| Yes | No | No | No | | |

quartz (14808-60-7)

| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significant risk level (NSRL) | Maximum allowable dose level (MADL) |
|---|---|---|---|----------------------------------|-------------------------------------|
| Yes | No | No | No | | |

Component

State or local regulations

| | |
|--|---|
| Cristobalite (14464-46-1) | 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 |
| aluminium oxide, non-fibrous (1344-28-1) | 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 |
| Quartz (14808-60-7) | U.S. - New Jersey - Right to Know Hazardous Substance List |

SECTION 16: Other information

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Revision date

: 9/19/2024

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 |

Safety Data Sheet (SDS), USA

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.