

1. Identification

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|--------------------------------------|--|
| Product identifier | CS-TECH 60Z-ST |
| Other means of identification | |
| Brand Code | 202C |
| Synonyms | WM-7655 SHOTCRETE |
| Recommended use | For Industrial Use Only |
| Recommended restrictions | Avoid dry cutting, blasting, or dust generation. Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations. |

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

| | | | |
|-------------------------------|---|--------------|--|
| Company name | HarbisonWalker International | | |
| Address | 1305 Cherrington Parkway, Suite 100 Moon Township, Pennsylvania 15108 US | | |
| Telephone | General Phone: | 412-375-6600 | |
| Website | www.thinkHWI.com | | |
| Emergency phone number | Not available. | | |

2. Hazard(s) identification

| | | |
|------------------------------|--|-------------|
| Physical hazards | Not classified. | |
| Health hazards | Carcinogenicity | Category 1A |
| | Reproductive toxicity | Category 1A |
| Environmental hazards | Hazardous to the aquatic environment, acute hazard | Category 3 |
| | Hazardous to the aquatic environment, long-term hazard | Category 3 |
| OSHA defined hazards | Not classified. | |

Label elements



| | |
|--|--|
| Signal word | Danger |
| Hazard statement | May cause cancer. May damage fertility or the unborn child. Harmful to aquatic life. Harmful to aquatic life with long lasting effects. |
| Precautionary statement | |
| Prevention | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. |
| Response | If exposed or concerned: Get medical advice/attention. |
| Storage | Store away from incompatible materials. |
| Disposal | Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Hazard(s) not otherwise classified (HNOC) | None known. |
| Supplemental information | None. |

3. Composition/information on ingredients

Mixtures

| Chemical name | Common name and synonyms | CAS number | % |
|--|--|--------------|-----------|
| Mullite | | 1302-93-8 | 40 - 60 |
| Aluminium Oxide (Non-Fibrous) | | 1344-28-1 | 10 - 25 |
| Amorphous Silica | Fumed Silica Silica, crystalline free | 7631-86-9 | 10 - 25 |
| Fumes, Silica | | 69012-64-2 | 2.5 - 10 |
| Kyanite | | 1302-76-7 | 2.5 - 10 |
| Zircon | | 14940-68-2 | 2.5 - 10 |
| Titanium Dioxide | | 13463-67-7 | 1 - 2.5 |
| Quartz (SiO ₂) | | 14808-60-7 | 0.1 - 2.5 |
| TRADE SECRET* | | Proprietary* | 0.1 - 2.5 |
| Cristobalite | | 14464-46-1 | < 0.5 |
| Other components below reportable levels | | | 2.5 - 10 |

Crystalline silica may be present at low concentrations; most of this is encapsulated in the coarse aggregate or as part of the clays or sands.

4. First-aid measures

| | |
|---|---|
| Inhalation | Move to fresh air. Call a physician if symptoms develop or persist. |
| Skin contact | Wash off with soap and water. Get medical attention if irritation develops and persists. |
| Eye contact | Rinse with water. Get medical attention if irritation develops and persists. |
| Ingestion | Rinse mouth. Get medical attention if symptoms occur. |
| Most important symptoms/effects, acute and delayed | Direct contact with eyes may cause temporary irritation. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. |
| General information | If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance. |

5. Fire-fighting measures

| | |
|--|---|
| Suitable extinguishing media | Use fire-extinguishing media appropriate for surrounding materials. |
| Unsuitable extinguishing media | Not available. |
| Specific hazards arising from the chemical | Not applicable. |
| Special protective equipment and precautions for firefighters | Not available. |

6. Accidental release measures

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|--|--|
| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. For personal protection, see section 8 of the SDS. |
| Methods and materials for containment and cleaning up | Prevent product from entering drains. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS. |
| Environmental precautions | Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. |

7. Handling and storage

| | |
|---|--|
| Precautions for safe handling | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. |
| Conditions for safe storage, including any incompatibilities | Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). |

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components | Type | Value | Form |
|---|------|------------------------|----------------------|
| Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1) | PEL | 5 mg/m ³ | Respirable fraction. |
| | | 15 mg/m ³ | Total dust. |
| Cristobalite (CAS 14464-46-1) | PEL | 0.05 mg/m ³ | Respirable dust. |
| Quartz (SiO ₂) (CAS 14808-60-7) | PEL | 0.05 mg/m ³ | Respirable dust. |
| Titanium Dioxide (CAS 13463-67-7) | PEL | 15 mg/m ³ | Total dust. |
| Zircon (CAS 14940-68-2) | PEL | 5 mg/m ³ | |

US. OSHA Table Z-3 (29 CFR 1910.1000)

| Components | Type | Value | Form |
|---|------|------------------------|----------------------|
| Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1) | TWA | 5 mg/m ³ | Respirable fraction. |
| | | 15 mg/m ³ | Total dust. |
| | | 50 mppcf | Total dust. |
| Amorphous Silica (CAS 7631-86-9) | TWA | 15 mppcf | Respirable fraction. |
| | | 0.8 mg/m ³ | |
| Cristobalite (CAS 14464-46-1) | TWA | 20 mppcf | |
| | | 0.05 mg/m ³ | Respirable. |
| Fumes, Silica (CAS 69012-64-2) | TWA | 1.2 mppcf | Respirable. |
| | | 0.8 mg/m ³ | |
| Quartz (SiO ₂) (CAS 14808-60-7) | TWA | 20 mppcf | |
| | | 0.1 mg/m ³ | Respirable. |
| Titanium Dioxide (CAS 13463-67-7) | TWA | 2.4 mppcf | Respirable. |
| | | 5 mg/m ³ | Respirable fraction. |
| | | 15 mg/m ³ | Total dust. |
| | | 50 mppcf | Total dust. |
| | | 15 mppcf | Respirable fraction. |

US. ACGIH Threshold Limit Values

| Components | Type | Value | Form |
|---|------|-------------------------|----------------------|
| Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1) | TWA | 1 mg/m ³ | Respirable fraction. |
| Cristobalite (CAS 14464-46-1) | TWA | 0.025 mg/m ³ | Respirable fraction. |
| Kyanite (CAS 1302-76-7) | TWA | 1 mg/m ³ | Respirable fraction. |
| Mullite (CAS 1302-93-8) | TWA | 1 mg/m ³ | Respirable fraction. |
| Quartz (SiO ₂) (CAS 14808-60-7) | TWA | 0.025 mg/m ³ | Respirable fraction. |
| Titanium Dioxide (CAS 13463-67-7) | TWA | 10 mg/m ³ | |

US. ACGIH Threshold Limit Values

| Components | Type | Value | Form |
|-------------------------|------|----------|------|
| Zircon (CAS 14940-68-2) | STEL | 10 mg/m3 | |
| | TWA | 5 mg/m3 | |

US. NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value | Form |
|---|------|------------|------------------|
| Amorphous Silica (CAS 7631-86-9) | TWA | 6 mg/m3 | |
| Cristobalite (CAS 14464-46-1) | TWA | 0.05 mg/m3 | Respirable dust. |
| Fumes, Silica (CAS 69012-64-2) | TWA | 6 mg/m3 | |
| Quartz (SiO ₂) (CAS 14808-60-7) | TWA | 0.05 mg/m3 | Respirable dust. |
| Zircon (CAS 14940-68-2) | STEL | 10 mg/m3 | |
| | TWA | 5 mg/m3 | |

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Zirconium silicates (zircon sands) contain trace amounts (106-120 pCi/g) of naturally occurring radioactive uranium and thorium. Overexposure by inhalation to respirable dust containing uranium and thorium may cause lung cancer. Eye contact with the dust may cause eye irritation. Measurements made by Dupont during the use of a similar mineral sand indicated the observance of the 5 mg/m³ OSHA PEL for respirable dust and/or the PEL for quartz ensures the user is below the exposure limits established for uranium and thorium. No LD₅₀ or LC₅₀ can be found for zircon sand.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.



General hygiene considerations

Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Solid.

Form

Solid.

Color

Not available.

Odor

Not available.

Odor threshold

Not available.

pH

Not available.

| | |
|---|----------------|
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | Not available. |
| Flash point | Not available. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not available. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | Not available. |
| Vapor density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | |
| Solubility (water) | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Other information | |
| Explosive properties | Not explosive. |
| Oxidizing properties | Not oxidizing. |

10. Stability and reactivity

| | |
|---|--|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | Contact with incompatible materials. |
| Incompatible materials | Acids. Chlorine. Fluorine. Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure. |
| Hazardous decomposition products | No hazardous decomposition products are known. |

11. Toxicological information

Information on likely routes of exposure

| | |
|---------------------|--|
| Inhalation | Prolonged inhalation may be harmful. |
| Skin contact | No adverse effects due to skin contact are expected. |
| Eye contact | Direct contact with eyes may cause temporary irritation. |
| Ingestion | Expected to be a low ingestion hazard. |

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

| | |
|--|--|
| Acute toxicity | Not known. |
| Skin corrosion/irritation | Prolonged skin contact may cause temporary irritation. |
| Serious eye damage/eye irritation | Direct contact with eyes may cause temporary irritation. |

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

IARC Monographs. Overall Evaluation of Carcinogenicity

| | |
|---|---|
| Amorphous Silica (CAS 7631-86-9) | 3 Not classifiable as to carcinogenicity to humans. |
| Cristobalite (CAS 14464-46-1) | 1 Carcinogenic to humans. |
| Fumes, Silica (CAS 69012-64-2) | 3 Not classifiable as to carcinogenicity to humans. |
| Quartz (SiO ₂) (CAS 14808-60-7) | 1 Carcinogenic to humans. |
| Titanium Dioxide (CAS 13463-67-7) | 2B Possibly carcinogenic to humans. |

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

| | |
|---|--------|
| Cristobalite (CAS 14464-46-1) | Cancer |
| Quartz (SiO ₂) (CAS 14808-60-7) | Cancer |

US. National Toxicology Program (NTP) Report on Carcinogens

| | |
|---|---|
| Cristobalite (CAS 14464-46-1) | Known To Be Human Carcinogen. Reasonably Anticipated to be a Human Carcinogen. |
| Quartz (SiO ₂) (CAS 14808-60-7) | Known To Be Human Carcinogen. |
| TRADE SECRET (CAS Proprietary) | Reasonably Anticipated to be a Human Carcinogen. |

Reproductive toxicity May damage fertility or the unborn child.

Developmental effects

| | |
|----------------------------|---|
| Quartz (SiO ₂) | 0 |
|----------------------------|---|

Developmental effects - EU category

| | |
|----------------------------|---|
| Quartz (SiO ₂) | 0 |
|----------------------------|---|

Embryotoxicity

| | |
|----------------------------|---|
| Quartz (SiO ₂) | 0 |
|----------------------------|---|

Reproductivity

| | |
|----------------------------|---|
| Quartz (SiO ₂) | 0 |
|----------------------------|---|

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Persistence and degradability No data is available on the degradability of any ingredients in the mixture.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

| | |
|--|---|
| Disposal instructions | This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. |
| Hazardous waste code | Since this product is used in several industries, no Waste Code can be provided by the supplier. The Waste Code should be determined in arrangement with your waste disposal partner or the responsible authority. |
| Waste from residues / unused products | Not available. |
| Contaminated packaging | Not available. |

14. Transport information

| | |
|---|-----------------------------------|
| DOT | Not regulated as dangerous goods. |
| IATA | Not regulated as dangerous goods. |
| IMDG | Not regulated as dangerous goods. |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |

15. Regulatory information

| | |
|-------------------------------|--|
| US federal regulations | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All chemical substances in this product are listed on the TSCA chemical substance inventory where required. |
|-------------------------------|--|

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

TRADE SECRET (CAS Proprietary) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

| | |
|---|-----------------------|
| Cristobalite (CAS 14464-46-1) | Cancer |
| Quartz (SiO ₂) (CAS 14808-60-7) | Cancer |
| Cristobalite (CAS 14464-46-1) | lung effects |
| Quartz (SiO ₂) (CAS 14808-60-7) | lung effects |
| Cristobalite (CAS 14464-46-1) | immune system effects |
| Quartz (SiO ₂) (CAS 14808-60-7) | immune system effects |
| Cristobalite (CAS 14464-46-1) | kidney effects |
| Quartz (SiO ₂) (CAS 14808-60-7) | kidney effects |

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Carcinogenicity
Reproductive toxicity

SARA 313 (TRI reporting)

| Chemical name | CAS number | % by wt. |
|-------------------------------|-------------|-----------|
| Aluminium Oxide (Non-Fibrous) | 1344-28-1 | 10 - 25 |
| TRADE SECRET | Proprietary | 0.1 - 2.5 |

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

TRADE SECRET (CAS Proprietary)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

California Proposition 65



WARNING: This product can expose you to chemicals including Titanium Dioxide: Titanium Dioxide, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

| | |
|---|---------------------------|
| Quartz (SiO ₂) (CAS 14808-60-7) | Listed: October 1, 1988 |
| Rutile (TiO ₂) (CAS 1317-80-2) | Listed: September 2, 2011 |
| Titanium Dioxide (CAS 13463-67-7) | Listed: September 2, 2011 |
| TRADE SECRET (CAS Proprietary) | Listed: October 1, 1992 |

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

| |
|---|
| Cristobalite (CAS 14464-46-1) |
| Quartz (SiO ₂) (CAS 14808-60-7) |
| Titanium Dioxide (CAS 13463-67-7) |
| TRADE SECRET (CAS Proprietary) |

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | No |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | No |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | No |
| Taiwan | Taiwan Chemical Substance Inventory (TCSI) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | No |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 09-04-2019

Version # 01

Disclaimer This information is based on our present knowledge on creation date. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Revision information Product and Company Identification: Product and Company Identification
Composition / Information on Ingredients: Ingredients