

**TCC Materials**  
2025 Centre Pointe Boulevard, Suite 300  
Mendota Heights, MN 55120-1221

**Emergency Telephone Number:**  
651-688-9116  
**Information Telephone Number**  
651-688-9116

**Revision Date**  
September 2017

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### Section 1: Product Identification

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Product Type: Dry Packaged Cement-Based Products

**Product Name:**

Tech-Mix® Crack-Resistant Concrete Mix

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### Section 2: Hazard Identification

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The most immediate and likely hazards are burns from dust in the eye. When the product is mixed with water, it will form an alkaline solution, which can cause skin irritation. Dust from the product is irritating to breathe. Prolonged overexposure to dust from the product is harmful to breathe, because it will contain crystalline silica.

**GHS Label Elements**

**Hazard Pictogram(s):**



**Signal Word:** DANGER

This product has been evaluated according to GHS and 29CFR1910.1200, Appendix A. It is categorized as a Health Hazard Carcinogen Category 1A, because it contains crystalline silica (quartz). It is categorized as a Health Hazard (serious eye damage/eye irritation - Category 1 and skin irritation – Category 2) because it contains Portland cement.

**Applicable hazard statement(s) based on cement content**

- Causes severe skin burns and eye damage.
- May cause an allergic reaction.
- May cause respiratory irritation.

**Applicable hazard statement(s) based on crystalline silica content**

- May cause cancer from inhaling dust.
- Causes damage to respiratory system (silicosis) through prolonged or repeated exposure to inhaled dust.

**Precautionary Statement(s)**

**Prevention**

Do not breathe dust. Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection (water resistant protective gloves; goggles recommended to prevent any dust in eyes). Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product.

**Response**

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor if any eye irritation or discomfort develops.

IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with plenty of water. Wash contaminated clothing before reuse. If skin irritation occurs, get medical attention.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center/doctor.

If exposed or concerns, or if you feel unwell: Get medical advice.

**Storage**

Store locked up, in a dry location, in original labeled packaging.

**Disposal**

Dispose of contents/container in accordance with local/state/national regulations.

**Other Hazards**

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions or illness.

HMIS® Rating: Health: 3\* Fire: 0 Reactivity: 0

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme  
HMIS® is a registered trademark of the National Paint and Coatings Association

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**Section 3: Hazardous Ingredients/Composition**

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Ingredient	Typical Percentage	CAS #
Portland Cement .....	5-25%	65997-15-1
Fly Ash** .....	5-10%	68131-74-8
Sand, which includes		
silica sand (as quartz) .....	30-60%	14808-60-7
Aggregate (rock) .....	30-60%	N.A.

\*Specific chemical compositions withheld as trade secret. They are available upon request to health professionals, employees and their designated representatives in accord with 29CFR1910.1200(i).

\*\*Fly Ash typically consists of silicon dioxide, aluminum oxide, iron oxide, and other metal oxides.

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## Section 4: First Aid Measures

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### **Inhalation:**

Remove person to fresh air and keep comfortable for breathing. If coughing persists, obtain medical attention.

### **Eye contact:**

Immediately rinse eyes: hold eyelids apart and flush eyes with plenty of water. At least 15 minutes of flushing is recommended. Remove contact lenses, if present and easy to do so. Get prompt medical attention for any discomfort or irritation.

### **Skin Contact:**

Remove contaminated clothing. Remove dry material from skin, but avoid creating dust. Promptly wash off with plenty of soap and water. Get medical attention for any burns or persistent rashes.

### **Ingestion:**

Do not induce vomiting unless directed to do so by medical personnel. If subject is conscious, rinse the mouth with water to remove any material and drink plenty of water to dilute any swallowed material. DO not give drink or attempt to force water to an unconscious person. Get medical advice/attention.

### **Most Important Symptoms/Effects (Acute and Delayed)**

Inhalation: Breathing the dust may cause coughing, wheezing, sore throat. Repeated exposure to the dust can cause a runny nose, chronic coughing and impaired lung function. Long term exposure to respirable crystalline silica in the dust can cause silicosis (lung scarring) and lung cancer.

Eye contact: Causes serious eye irritation and may scratch eye surface due to particle abrasion. Eye irritation, burning from cement. Cement and lime react with moisture to form a very alkaline solution, which can severely irritate or burn eyes.

Skin Contact: Can cause skin irritation and can dry the skin. Because cement and lime react with moisture exothermically to form an alkaline solution, contact with damp skin can cause irritation or burns, which may not be felt immediately. Severe burns of the feet have resulted from cement or lime getting into footwear. Some people may develop an allergic dermatitis (cement itch) from chromate contaminants in Portland cement.

### **Recommendations for Immediate Medical Care or Special Treatment**

Seek immediate medical attention for inhalation of large quantities of dust or exposure of wet material over large areas of skin.

Seek immediate medical attention if material comes into contact with eyes and cannot be immediately removed.

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### Section 5: Fire Fighting Measures

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<b>General Fire Hazards</b>	None. Material is not considered flammable or combustible.
<b>Extinguishing Media</b>	Use water or water spray to extinguish any fires involving this material.
<b>Extinguishing Media to Avoid</b>	None.
<b>Hazards of Combustion</b>	None.
<b>Fire Fighting Recommendations</b>	Firefighters should always wear full protective gear to fight any fire.

Refer to Section 9 for flammability information.

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### Section 6: Accidental Release Measures

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#### **Personal Precautions, Protective Equipment and Emergency Procedures**

Avoid creating dust. Prevent material from entering sewers, drains, ditches, or waterways. Wear respiratory protection and protective eyewear clothing to avoid eye or skin contact. Ventilate area and avoid creating dust. Remove unnecessary persons from the area.

#### **Methods and Materials for Containment and Cleaning Up**

Scoop or vacuum up spilled material while avoiding dust creation. Scoop up wet material and place in approved container. Allow wet materials to harden before disposal.

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### Section 7: Handling and Storage

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#### **Precautions for Safe Handling**

Avoid contact with skin or eyes. Avoid breathing dust. Use only in well-ventilated areas. Wear appropriate personal protective equipment to prevent skin or eye contact and use respiratory protection equipment if dusty or in poor ventilated areas. Wash hands after use. Do not eat, drink, or use tobacco products when handling any chemical products.

#### **Conditions for Safe Storage, including any Incompatibilities**

Store in well-ventilated areas away from moisture and incompatible materials. If stored in containers, keep containers closed when not in use.

#### **Incompatible Materials**

Water/moisture exposure will cause material to generate heat. Keep away from fluoride compounds, strong acids, alkalines, and oxidizers. Cement dissolves in hydrofluoric acid, producing corrosive silicone tetrafluoride gas.

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**Section 8: Exposure Controls/Personal Protection**

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**Occupational Exposure Limits:**

	<b>OSHA PEL</b>	<b>ACGIH TLV</b>	<b>NIOSH REL</b>
Portland cement	10 mg/m <sup>3</sup> (total) 5 mg/m <sup>3</sup> (respirable)	1 mg/m <sup>3</sup> (respirable)	10 mg/m <sup>3</sup>
Fly Ash	None established. (Evaluate individual constituents (crystalline silica))		
Crystalline silica (quartz)	50 µg/m <sup>3</sup> (8-hr TWA)	25 µg/m <sup>3</sup> (respirable)	50 µg/m <sup>3</sup> (respirable)

**Engineering Controls:**

Avoid creating dust.

If cutting or grinding material after it has hardened, water can be used as a dust suppressant.

**Personal protective equipment**

**Face and eyes:** Safety glasses with side shields or protective goggles should be worn while using this product. For extremely dusty conditions, non-vented goggles or goggles with indirect venting are recommended. Avoid contact lens wear when using this product.

**Body:** Avoid any skin contact, particularly when skin may be wet from sweat. Long sleeved shirts and trousers should be worn while using this material. Wear any water-impermeable gloves such as PVC gloves, particularly for prolonged contact. Wear waterproof boots, high enough to prevent any cement from getting into them. Promptly wash off of skin and remove contaminated clothing.

**Respiratory:** If exposure levels cannot be maintained below an acceptable limits, suitable particulate-filtering facemasks or respirators approved by MSHA/NIOSH should be worn in accordance with the user's respiratory protection program and OSHA/MSHA guidelines.

**Hands:** Protective gloves with wrist/arm cutoffs should be worn to avoid direct contact with skin and to protect hands from abrasion.

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**Section 9: Physical and Chemical Properties**

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<b>Appearance:</b>	Powder.
<b>Color:</b>	Grey or grey-tan powder.
<b>Odor:</b>	No significant odor.
<b>Flash point:</b>	Noncombustible.
<b>Flammable limits:</b>	N/A
<b>Boiling Point:</b>	>2700°F
<b>Melting point:</b>	>2700°F

**Specific Gravity:** Not available.  
**Solubility in water:** Slight.  
**pH:** 11-13 (cements in water)  
**Evaporation Rate:** Not applicable. Product does not evaporate.  
**Evaporation rate (butyl acetate = 1):** not applicable  
**VOC content, wt. %:** 0%, Not applicable; 0 wt., Not applicable.

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### Section 10: Stability and Reactivity

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**Reactivity:** Reacts with water forming heat and calcium hydroxide.  
**Chemical Stability:** Stable at normal temperatures and pressure.  
**Possibility of Hazardous Reactions:** None. Hazardous polymerization will not occur.  
**Conditions to Avoid:** Moisture or wetting will cause exothermic heating as product cures.  
**Incompatible Materials:** Avoid contact with strong acids, oxidizers, aluminum and aluminum salts.  
**Hazardous Decomposition:** Reacts with water to form calcium hydroxide which can irritate/damage skin. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Material is not likely to decompose. Abrasion can create very fine particles that can get deep into the lungs (respirable size).

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### Section 11: Toxicological Information

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**Information of Toxicological Effects:**

**Likely Routes of Exposure:**

Skin contact, skin absorption, eye contact, inhalation, and ingestion.

**Symptoms related to physical/chemical/toxicological characteristics:**

**Eye:** Causes serious eye damage. May cause burns in the presence of moisture. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

**Skin:** Causes skin irritation. May cause burns in the presence of moisture. Skin contact during hydration may slowly develop sufficient heat that may cause severe burns possibly resulting in permanent injury. Do not allow product to harden around any body part or allow continuous, prolonged contact with skin. Handling can cause dry skin. May cause sensitization by skin contact.

**Ingestion:** Harmful if swallowed. May cause stomach distress, nausea or vomiting.

**Inhalation:** Inhalation of dust may cause respiratory tract irritation. May cause damage to organs through prolonged or repeated exposure by inhalation.

**Acute Toxicity:**

Ingredient	IDLH	LC50	LD50
Portland cement	5000 mg/m <sup>3</sup>	Not available.	Not available
Fly Ash	Not available.	Not available.	Not available.



Crystalline silica (quartz)	Ca [25 mg/m <sup>3</sup> (cristobalite, tridymite); 50 mg/m <sup>3</sup> (quartz, Tripoli)]	Not available.	Oral 500 mg/kg, rat
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Ingredient	Chemical Listed as Carcinogen or Potential Carcinogen (NTP, IARC, OSHA, ACGIH, CP65)*
Portland cement	G-A4
Fly Ash	G-A4
Crystalline silica (quartz)	G-A2, I-1, N-1, CP65

**Delayed, Immediate, and Chronic Effects of Short-and Long-Term Exposure:**

**Skin Corrosion/Irritation:** Portland cement is caustic and abrasive to the skin. In contact with water or moisture, it can form alkaline hydroxides, which can cause burns that may not be felt immediately.

Portland cement may contain trace amounts of hexavalent chromium. Hexavalent chromium can cause allergic contact dermatitis.

**Serious Eye Damage/Irritation:** Portland cements are categorized as Health Hazard Serious Eye Damage/Eye Irritation Category 1 and Serious Skin Category 2, because they form a strong alkaline solution in water.

**Respiratory Sensitization:** Based on available data, the classification criteria are not met.

**Skin Sensitization:** May cause an allergic skin reaction.

**STOT-Single Exposure:** May cause respiratory irritation.

**Chronic Health Effects:** Respirable crystalline silica in the form of quartz or cristobalite from occupational sources is listed by the International Agency for Research on Cancer (IARC) and National Toxicology Program (NTP) as a lung carcinogen. Prolonged exposure to respirable crystalline silica has been known to cause silicosis, a fibrosis (scarring) of the lungs, which may be disabling. There is evidence that exposure to respirable silica or the disease silicosis is associated with an increased incidence of Scleroderma, tuberculosis and kidney disorders. While there may be a factor of individual susceptibility to a given exposure to respirable silica dust, the risk of contracting silicosis and the severity of the disease is clearly related to the amount of dust exposure and the length of time (usually years) of exposure.

**Carcinogenicity:** Crystalline silica is listed as carcinogenic according to IARC. ACGIH classified crystalline silica as a suspected human carcinogen.

**Germ Cell Mutagenicity:** This product is not classified as a mutagen.

**Reproductive Toxicity:**

**Developmental:** Based on available data, the classification criteria are not met.

**Teratogenicity:** Not hazardous by WHMIS/OSHA criteria.

**Embryotoxicity:** Not hazardous by WHMIS/OSHA criteria.

**Fertility:** Based on available data, the classification criteria are not met.

**STOT-Repeated Exposure:** Causes damage to organs through prolonged or repeated exposure.

**Aspiration Hazard:** Based on available data, the classification criteria are not met.

**Toxicologically Synergistic Materials:** Not available.

**Other Information:** Not available.

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## Section 12: Ecological Information

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Product as a whole has not been tested but is expected to have low acute toxicity.

**Ecotoxicity:**

Not considered hazardous to the aquatic environment or to the ozone layer.

**Persistence and degradability:** Not likely to biodegrade.

**Mobility in soil:** No information available.

**Bioaccumulation:** Based on ingredients, not likely to bioaccumulate.

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## Section 13: Disposal Considerations

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**Disposal Methods**

Do not sewer or dump on the ground.

As provided, not a RCRA-regulated waste.

Dispose of in accordance with federal, state, and local regulations.

**Special Considerations**

Avoid creating or breathing dust during disposal. Avoid contact with eyes. Refer to Section 8 for personal protection measures.

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## Section 14: Transportation

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Not a DOT-regulated hazardous material. Not classified as dangerous goods for DOT, IATA, IMDG, TDG

Do not handle until all safety precautions have been read and understood.

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## Section 15: Regulatory Information

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**Safety, Health, and Environmental Regulations / Legislation Specific for the Chemical**

**Canadian:** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.



**US:** MSDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

**Mexico:** MSDS prepared pursuant to NOM-018-STPS-2000.

**US Federal Regulations:**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

<b>SARA Title III</b>				
Ingredient	Section 302 (EHS) TPQ (lbs.)	Section 304 ESH RQ (lbs.)	CERCLA RQ (lbs.)	Section 313
Portland cement	Not listed.	Not listed.	Not listed.	Not listed.
Fly Ash	Not listed.	Not listed.	Not listed.	Not listed.
Crystalline silica (quartz)	Not listed.	Not listed.	Not listed.	Not listed.

**State Regulations:**

The state of California requires the following statement (Proposition 65) in regards to this material:



**WARNING:** This product can expose you to chemicals including crystalline silica which are known to the State of California to cause cancer, birth defects, or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

US. Massachusetts RTK - Substance List

Silica, quartz (CAS 14808-60-7)

US. New Jersey Worker and Community Right-to-Know Act

Silica, quartz (CAS 14808-60-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Silica, quartz (CAS 14808-60-7)

US. Rhode Island RTK

Not regulated

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Silica, quartz (CAS 14808-60-7)

**Global Inventories**

Ingredient	Canada DSL/NDSL	USA TSCA
Portland cement	DSL	Yes.
Fly Ash	DSL	Yes.
Crystalline silica (quartz)	DSL	Yes.

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**Section 16: Other Information**

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Additional information on the products is available at: [www.tccmaterials.com](http://www.tccmaterials.com)

Tech-Mix® is a registered trademark of TCC Materials.

Date of Preparation: September 5, 2017  
Version: 1.0

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