Safety Data Sheet

SECTION 1: IDENTIFICATION OF PRODUCT AND SOURCE

Product Name: Steelike® UHPFRC Mix Design; Steelike® VT UHPFRC Mix Design; Steelike® AC UHPFRC Mix Design

Product Identifiers: Steelike® Concrete Mix; Steelike® UHPC Concrete Mix; Steelike® UHPFRC Mix Design; Steelike® VT UHPFRC Mix Design, Steelike® AC UHPFRC Mix Design

Supplier:

Kulish Design Co., LLC
7481 Huntsman Blvd. #710
Springfield, VA 22153

Information and Emergency Telephone Number:

+1-609-703-2020

Contact Person: William T. Kulish
Email: bill@kulishdesignco.com

Recommended Use of Product: Steelike® UHPFRC Mix Design is a modified ultra-high performance material used to produce concrete products useful as building materials, construction, as well as artisan concrete product.

Note: Metallic and/or organic fibers may be added by the end-user. Sealers may also be applied by the end-user. Refer to fiber and sealer vendor SDS for specific health and safety information.

SECTION 2: HAZARDS IDENTIFICATION

Hazard Classification of Substance or Mixture

CARCINOGENICITY/INHALATION – Category 1A
SKIN CORROSION/IRRITATION — Category 1 substance or mixture:
SERIOUS EYE DAMAGE/ EYE IRRITATION — Category 1
SKIN SENSITIZATION — Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] — Category 3

Signal Word Danger

Hazard Statement

May cause cancer
May cause damage to organs (lung) through prolonged or repeated exposure

Safety Data Sheet

Causes skin irritation and may cause irreversible skin damage
Causes eye irritation and may cause irreversible eye damage

Hazard Pictograms

Precautionary Statement

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash any exposed body parts. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Avoid breathing dust. If exposed or concerned: Get medical advice/attention. If on skin: Wash with plenty of water.

Causes eye and skin burns. See Section 4 for additional details. May present risk of engulfment. See Section 7 for additional details. Overexposure to wet concrete mix can cause severe skin damage in the form of chemical burns, including third degree burns. The same severe injury can occur if wet or moist skin is exposed to dry concrete mix. Clothing wet with moisture from concrete mix can transmit the caustic effects to the skin, causing chemical burns. Concrete mix causes skin burns with little warning; discomfort or pain cannot be relied upon to alert a person to a serious injury. You may not feel pain or the severity of the burn until hours after the exposure.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE: Contact with wet cement may aggravate existing skin conditions. Sensitivity to hexavalent chromium can be aggravated by exposure.

Response: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of appropriate exposure limits has caused silicosis, fibrosis or scar tissue formations in the lungs. Call a POISON CENTER or physician if you feel unwell.

IF ON SKIN: Wash with plenty of pH neutral soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation or rash occurs: get medical attention. Concrete mix may contain trace

Safety Data Sheet

amounts of hexavalent chromium. Hexavalent chromium is associated with allergic skin reactions which may appear as contact dermatitis and skin ulcerations. Persons already sensitized may react to their first exposure to cement. Other individuals may develop allergic dermatitis after repeated exposure to cement. The symptoms of allergic reactions may include reddening of the skin, rash, and irritation. Symptoms of chronic exposure to wet cement may include reddening, irritation, and eczematous rashes. Drying, thickening, and cracking of the skin and nails may also occur.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Exposure to dust may cause immediate or delayed irritation or inflammation. Eye contact by larger amount of dry power or splashes of wet concrete mix may cause effects ranging from moderate eye irritation to chemical burns or blindness. Immediately call a POISON CENTER or physician.

IF INGESTED: Irritating to mouth, throat and stomach. Ingestion of large quantities may cause severe irritation and chemical burns of the mouth, throat, stomach and digestive tract. Do not ingest concrete mix. Get immediate medical attention.

Storage: Keep in tightly closed containers, ambient air temperature, keep dry. Restrict or control access to stockpile areas (store locked up). Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container or vessel that stores or contains aggregates without an effective procedure for assuring safety.

Disposal: Dispose of contents/container in accordance with local/regional/ national/international regulations.

Supplemental Information: Contains Respirable Crystalline Silica (RCS), which may cause cancer. Sand and Gravel is a naturally occurring mineral complex that contains varying quantities of quartz (crystalline silica). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC and NTP; ACGIH states that it is a suspected cause of cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes.

Contains portland cement and slag. Overexposure can cause serious, potentially irreversible skin or eye damage in the form of chemical (caustic) burns, including third degree burns. The same serious injury can occur if wet or moist skin has prolonged contact exposure to dry concrete mix.

Description of any hazards not otherwise Not applicable.

Safety Data Sheet

classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture: Mixture

Ingredients: sand, silica fume, Portland Cement, slag, nanosilica (also known as microsilica), and polycarboxylate plasticizer.

Ingredient Name	Components	wt% of Components in Ingredient	CAS number
Sand	Sand	>99	None
	Crystalline Silica (Quartz)	>1	14808-60-7
	Crystalline Silica (all forms)		CAS mixture
Silica Fume	Amorphous Silica[1]	>85	69012-64-2
	Amorphous Silica[2]	>85	69012-64-2
	Crystalline Silica[3]	<0.05	14808-60-7
	Carbon (C)	<6	7440-44-0
	Iron Oxide	<2	1309-37-1
	Aluminum Oxide	<2	1344-28-1
	Sodium Oxide	<2	1313-59-3
	Potassium Oxide	<2	12136-45-7
	Magnesium Oxide	<2	1309-48-4
	Calcium Oxide	<2	1305-78-8
Portland Cement	Cement, Portland chemicals	35-100	65997-15-1
	The Portland cement may contain the following in some concentration ranges:		
	Limestone	0 – 65	1317-65-3
	Gypsum	2-10	13397-24-5
	Hydrated Lime	0-50	1305-62-0
	Cement Kiln Dust	0-15	68475-76-3
	Iron Oxide	0-10	1309-37-1
	Bentonite	0-10	1302-78-9
	Magnesium Oxide	0-4	1309-48-4
	Calcium Oxide	0-4	1305-78-8
	Carbon Black	0-2	1333-66-4
	Quartz	<3	14808-60-7

Safety Data Sheet

Ingredient Name	Components	wt% of Components in Ingredient	CAS number
	Hexavalent chromium[2]	Trace	18450-29-9
Slag	Granulated blast furnace slag The slag cement may contain the following in some concentration ranges Calcium oxide Magnesium oxide Quartz Hexavalenent chromium[4]	100 30-40 8-15 <0.4 Trace	65996-69-2 1305-78-8 1309-48-4 14808-60-7 18450-29-9
Nanosilica (aka microsilica)	Silicon dioxide (amorphous)	99.998	112045-52-5
Plasticizer (aka high-range water reducer)	Polycaboxylate; polymer based on polycarboxylate ether The polycarboxylate may contain the following in some concentration ranges Zinc polyacrylate Potassium polyacrylate Sodium polyacrylate	100% 0-100 0-100 0-100	 25916-47-6 37232-29-4 55172-96-8 25608-12-2 9003-04-7

Any concentration shown as a range is to protect confidentiality or is due to process variation.

[1]Silica Fume produced from silicon metal alloys

[2]Silica Fume produced from ferro silicon metal alloys

[3]Respirable Dust

[4]Hexavalent chromium is included due to dermal sensitivity associated with the component.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Safety Data Sheet

SECTION 4: FIRST-AID MEASURES

Necessary first-aid instructions by relevant routes of exposure

Eye Contact: Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician.

Inhalation: Seek medical help if coughing or other symptoms persist. Inhalation of large amounts of concrete mix requires immediate medical attention. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If the individual is not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway

Skin Contact: Get medical attention immediately. Heavy exposure to concrete mix dust, wet concrete or associated water requires prompt attention. Quickly remove contaminated clothing, shoes, and leather goods such as watchbands and belts. Quickly and gently blot or brush away excess concrete mix. Immediately wash thoroughly with lukewarm, gently flowing water and non-abrasive pH neutral soap. Seek medical attention for rashes, burns, irritation, dermatitis and prolonged unprotected exposures to wet cement, cement mixtures or liquids from wet cement. Burns should be treated as caustic burns. Concrete mix causes skin burns with little warning. Discomfort or pain cannot be relied upon to alert a person to a serious injury. You may not feel pain or the severity of the burn until hours after the exposure. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure.

Ingestion Get medical attention immediately. Call a poison center or physician. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING unless directed to do so by medical personnel. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Have victim drink 60 to 240 mL (2 to 8 oz.) of water. Stop giving water if the exposed person feels sick as vomiting may be dangerous. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Safety Data Sheet

Description of the most important symptoms or effects, and any symptoms that are acute or delayed.

Eye Contact:	Causes serious eye damage.
Inhalation:	May cause respiratory irritation.
Skin Contact:	Causes severe burns. May cause an allergic skin reaction.
Ingestion:	May cause burns to mouth, throat and stomach.

Inhaling dust may cause discomfort in the chest, shortness of breath, and coughing. Prolonged inhalation may cause chronic health effects. This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica liberated from this product can cause silicosis, and may cause cancer.

Over-exposure signs/symptoms

Eye Contact:	Adverse symptoms may include the following: pain, watering and redness.
Inhalation:	Adverse symptoms may include the following: respiratory tract irritation and coughing.
Skin Contact:	Adverse symptoms may include the following: pain or irritation, redness and blistering may occur; skin burns, ulceration and necrosis may occur.
Ingestion:	Adverse symptoms may include the following: stomach pains.

Recommendations for immediate medical care and special treatment needed, when necessary.

Notes to physician:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Keep under observation. Symptoms may be delayed
Specific treatments:	Not Applicable
Protection of first-aiders:	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
General Information:	It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and lung (including asthma and other breathing disorders). If addicted to tobacco, smoking will impair the ability of the lungs to clear themselves of dust.

See toxicological information (Section 11)

Safety Data Sheet

SECTION 5: FIRE-FIGHTING MEASURES

Suitable extinguishing media:	Not flammable. Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media:	Do not use water jet or water-based fire extinguishers.
Specific hazards arising from the chemical:	No unusual fire or explosion hazards noted. Not a combustible dust.
Hazardous thermal decomposition Products:	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, sulfur oxides and metal oxide/oxides.
Special protective equipment for fire-fighters:	Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
General fire hazards	Contact with powerful oxidizing agents may cause fire and/or explosions (see section 10 of SDS). No unusual fire or explosion hazards.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency personnel:	For personal protective clothing requirements, please see Section 8.

Safety Data Sheet

Methods and materials for containment, cleaning up and Environmental precautions

Spilled material, where dust is generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust. Do not dry sweep or use compressed air for clean-up. Wetting of spilled material and/or use of respiratory protective equipment may be necessary. Avoid discharge of fine particulate matter into drains or water courses.

Small spill: Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of waste material by using a licensed waste disposal contractor.

Large spill: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place dust in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Large spills to waterways may be hazardous due to alkalinity of the product. Dispose of waste material using a licensed waste disposal contractor.
Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Protective measures: Do not handle until all safety precautions have been read and understood. Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure by obtaining and following special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material and keep the container tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse

Safety Data Sheet

container.

Advice on general occupational hygiene:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities:	Avoid generating dust. Handle with adequate ventilation for dust. See OSHA 29 CFR 1910-94 (Ventilation) A key to using the product safely requires the user to recognize that concrete mix reacts chemically with water to produce calcium hydroxide other coproducts which can cause severe chemical burns. Every attempt should be made to avoid skin and eye contact with cement. Do not get concrete mix inside boots, shoes or gloves. Do not allow wet, saturated clothing to remain against the skin. Promptly remove clothing and shoes that are dusty or wet with concrete mix. Launder/clean clothing and shoes before reuse. Do not enter a confined space that stores or contains concrete mix unless appropriate procedures and protection are available. Concrete mix can build up or adhere to the walls of a confined space and then release or fall suddenly (engulfment).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Ingredient name	Occupation Exposure limits
Sand	
Crystalline Silica (Quartz)	OSHA PEL (United States, 6/2010) TWA: 0.3 mg/m³. Form: Total dust (1,2) TWA: 0.1 mg/m³. Form: Respirable (1,2,3)
Crystalline Silica (all forms)	ACGIH TLV (United States, 3/2012) TWA: 0.025 mg/m³. Form: Respirable fraction NIOSH REL (United States, 6/2009) TWA: 0.05 mg/m³. Form: Respirable dust
Tridymite and Cristobalite (other forms of crystalline silica)	OSHA PEL (United States, 6/2010) TWA: 0.15 mg/m³. Form: Total dust (1) TWA: 0.05 mg/m³. Form: Respirable (1,2)

Safety Data Sheet

Ingredient name	Occupation Exposure limits
Silica Fume	
Crystalline Silica (Quartz)	OSHA PEL (United States, 6/2010) TWA: 0.3 mg/m³. Form: Total dust (1,2) TWA: 0.1 mg/m³. Form: Respirable (1,2,3)
Crystalline Silica (all forms)	ACGIH TLV (United States, 3/2012) TWA: 0.025 mg/m³. Form: Respirable fraction NIOSH REL (United States, 6/2009) TWA: 0.05 mg/m³. Form: Respirable dust
Tridymite and Cristobalite (other forms of crystalline silica)	OSHA PEL (United States, 6/2010) TWA: 0.15 mg/m³. Form: Total dust (1) TWA: 0.05 mg/m³. Form: Respirable (1,2)
Portland Cement	ACGIH TLV (United States, 3/2012). TWA: 1 mg/m^3 8 hours. Form: Respirable fraction NIOSH REL (United States, 6/2009). TWA: 5 mg/ m^3 10 hours. Form: Respirable fraction TWA: 10 mg/ m^3 10 hours. Form: Total OSHA PEL (United States, 6/2010). TWA: 5 mg/ m^3 8 hours. Form: Respirable fraction TWA: 15 mg/ m^3 8 hours. Form: Total dust
Calcium oxide	ACGIH TLV (United States, 3/2012). TWA: 2 mg/ m^3 8 hours. NIOSH REL (United States, 6/2009). TWA: 2 mg/ m^3 10 hours. OSHA PEL (United States, 6/2010). TWA: 5 mg/ m^3 8 hours.
Limestone	NIOSH REL (United States, 6/2009). TWA: 5 mg/ m^3 10 hours. Form: Respirable fraction TWA: 10 mg/ m^3 10 hours. Form: Total OSHA PEL (United States, 6/2010). TWA: 5 mg/ m^3 8 hours. Form: Respirable fraction TWA: 15 mg/ m^3 8 hours. Form: Total dust
Magnesium oxide	ACGIH TLV (United States, 3/2012). TWA: 10 mg/ m^3 8 hours. Form: Inhalable fraction

Safety Data Sheet

Ingredient name	Occupation Exposure limits
Quartz	OSHA PEL (United States, 6/2010). TWA: 15 mg/ m^3 8 hours. Form: Total particulates ACGIH TLV (United States, 3/2012). TWA: 0.025 mg/ m^3 8 hours. Form: Respirable fraction NIOSH REL (United States, 6/2009). TWA: 0.05 mg/ m^3 10 hours. Form: respirable dust OSHA PEL Z-3 (United States, 9/2005). TWA: 10mg/ m^3 divided by %SiO2 + 2: Respirable TWA: 30mg/ m^3 divided by %SiO2 + 2: Total
Calcium sulfate (gypsum)	ACGIH TLV (United States, 3/2012) TWA: 10 mg/ m^3 8 hours. Form: Respirable fraction NIOSH REL (United States, 6/2009) TWA 5 mg/ m^3 8 hours. Form: Respirable fraction TWA 10 mg/ m^3 8 hours. Form: Total dust OSHA PEL Z-1 (United States, 2/2006) TWA 5 mg/ m^3 8 hours. Form: Respirable fraction TWA 15 mg/ m^3 8 hours. Form: Total dust
Slag	
Cement, slag, chemicals	ACGIH TLV (United States, 3/2012). TWA: 1 mg/m^3 8 hours. Form: Respirable fraction NIOSH REL (United States, 6/2009). TWA: 5 mg/m^3 10 hours. Form: Respirable fraction TWA: 10 mg/m^3 10 hours. Form: Total OSHA PEL (United States, 6/2010). TWA: 5 mg/m^3 8 hours. Form: Respirable fraction TWA: 15 mg/m^3 8 hours. Form: Total dust
Calcium oxide	ACGIH TLV (United States, 3/2012). TWA: 2 mg/ m^3 8 hours. NIOSH REL (United States, 6/2009). TWA: 2 mg/ m^3 10 hours.

Safety Data Sheet

Ingredient name	Occupation Exposure limits
Magnesium oxide	OSHA PEL (United States, 6/2010). TWA: 5 mg/ m^3 8 hours. ACGIH TLV (United States, 3/2012). TWA: 10 mg/ m^3 8 hours. Form: Inhalable fraction OSHA PEL (United States, 6/2010). TWA: 15 mg/ m^3 8 hours. Form: Total particulates
Quartz	ACGIH TLV (United States, 3/2012). TWA: 0.025 mg/ m^3 8 hours. Form: Respirable fraction NIOSH REL (United States, 6/2009). TWA: 0.05 mg/ m^3 10 hours. Form: respirable dust OSHA PEL Z-3 (United States, 9/2005). TWA: 10mg/ m^3 divided by %SiO2 + 2: Respirable TWA: 30mg/ m^3 divided by %SiO2 + 2: Total
Nano Silica/ Micro Silica	
Crystalline Silica (Quartz)	OSHA PEL (United States, 6/2010) TWA: 0.3 mg/m³. Form: Total dust (1,2) TWA: 0.1 mg/m³. Form: Respirable (1,2,3)
Crystalline Silica (all forms)	ACGIH TLV (United States, 3/2012) TWA: 0.025 mg/m³. Form: Respirable fraction NIOSH REL (United States, 6/2009) TWA: 0.05 mg/m³. Form: Respirable dust
Tridymite and Cristobalite (other forms of crystalline silica)	OSHA PEL (United States, 6/2010) TWA: 0.15 mg/m³. Form: Total dust (1) TWA: 0.05 mg/m³. Form: Respirable (1,2)
Dry Polycarboxylate (plasticizer)	Not available

Safety Data Sheet

Appropriate engineering controls:	Use only with adequate ventilation. If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Exposure guidelines:	OSHA PELs, MSHA PELs, and ACGIH TLVs are 8-hr TWA values. NIOSH RELs are for TWA exposures up to 10-hr/day and 40-hr/wk. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Terms including "Particulates Not Otherwise Classified," "Particulates Not Otherwise Regulated," Particulates Not Otherwise Specified," and "Inert or Nuisance Due" are often used interchangeably; however, the user should review each agency's terminology for differences in meanings.
Biological limit values:	No biological exposure limits noted for the ingredient(s).

Individual protection measures

Hygiene measures:	Clean water should always be readily available for skin and (emergency) eye washing. Periodically wash areas contacted by concrete mix with a pH neutral soap and clean, uncontaminated water. If clothing becomes saturated with concrete mix, garments should be removed and replaced with clean, dry clothing.
Eye/face protection:	To prevent eye contact, wear safety glasses with side shields, safety goggles or face shields when handling dust or wet cement. Wearing contact lenses when working with concrete mixture is not recommended.
Hand protection:	Use impervious, waterproof, abrasion and alkali-resistant gloves. Do not rely on barrier creams in place of impervious gloves. Do not get concrete mix inside gloves.
Body protection:	Use impervious, waterproof, abrasion and alkali-resistant boots and protective long-sleeved and long-legged clothing to protect the skin from contact with wet concrete mix. To reduce foot and ankle exposure, wear impervious boots that are high enough to prevent concrete mix from getting inside them. Do not get concrete mix inside boots, shoes, or gloves. Remove clothing and protective equipment that becomes saturated with cement and immediately wash exposed areas of the body.
Other skin protection:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved. Footwear

and other gear to protect the skin should be approved by a specialist before handling this product.

Respiratory protection: Use 42 CFR 84 NIOSH/MSHA approved respirators when airborne concentrations equal or exceed the Permissible Exposure Limit.
When handling or performing work that produces dust or respirable crystalline silica in excess of applicable exposure limits, wear a NIOSH-approved respirator that is properly fitted and is in good condition. Respirators must be used in accordance with all applicable workplace regulations.

Thermal hazards Not anticipated. Wear appropriate thermal protective clothing if necessary.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	solid, particles of granular mixture containing amorphous sub-micron powder – dust has a tendency to agglomerate	**Lower and Upper explosive flammable limits:**	Not applicable
Color:	Various, (Gray or White)	**Vapor pressure:**	Not applicable
Odor:	Not applicable	**Vapor density:**	Not applicable
Odor threshold:	Not applicable	**Relative density**	Not applicable
pH:	Alkaline (>11.5) [Conc. (% w/w): 1%]	**Solubility:**	Slightly soluble in water.
Melting point:	Not applicable	**Solubility in water:**	0.1 to 1%
Boiling point:	Not applicable	**Partition coefficient: n-octanol/water**	Not applicable
Flash point:	Not applicable	**Auto-ignition temperature:**	Not applicable
Burning time:	Not applicable	**Decomposition temperature:**	Not applicable
Burning rate:	Not applicable	**SADT:**	Not applicable
Flammability (solid, gas):	Not applicable	**Viscosity:**	Not applicable

Safety Data Sheet

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Reacts slowly with water forming hydrated compounds, releasing heat and producing a strong alkaline solution until reaction is substantially complete.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid:	Avoid contact with strong oxidizing agents.
Incompatible materials:	Crystalline silica may react violently with strong oxidizing agents, causing fire and explosions. Reactive or incompatible with the following materials: oxidizing materials, acids, aluminum and ammonium salt. Concrete mix is highly alkaline and will react with acids to produce a violent, heat-generating reaction. Toxic gases or vapors may be given off depending on the acid involved. Reacts with acids, aluminum metals and ammonium salts. Aluminum powder and other alkali and alkaline earth elements will react in wet mortar or concrete, liberating hydrogen gas. Limestone ignites on contact with fluorine and is incompatible with acids, alum, ammonium salts, and magnesium. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silicates dissolve readily in hydrofluoric acid producing a corrosive gas — silicon tetrafluoride.
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:	Not expected to be acutely toxic
Irritation/Corrosion:	**Skin**: May cause skin irritation. May cause serious burns in the presence of moisture **Eyes**: Causes serious eye damage. May cause burns in the presence of

Safety Data Sheet

	moisture **Inhalation**: Airborne dust generated by the use or handling of this product may result in respiratory irritation. Repeated inhalation of respirable crystalline silica (quartz) may cause silicosis, a fibrosis (scarring) of the lungs. Silicosis is irreversible and may be fatal. Silicosis increases the risk of contracting pulmonary tuberculosis. Some studies suggest that repeated inhalation of respirable crystalline silica may cause other adverse health effects including lung and kidney cancer. **Ingestion**: Concrete mix dust may irritate and dehydrate throat and mouth.
Sensitization:	**Respiratory sensitization**: May cause sensitization due to the potential presence of trace amounts of hexavalent chromium. **Skin sensitization:** May cause sensitization due to the potential presence of trace amounts of hexavalent chromium.
Mutagenicity:	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic
Aspiration hazard:	Not expected to be an aspiration hazard.
Reproductive toxicity:	Not expected to be a reproductive hazard.
Symptoms related to physical, chemical and toxicological characteristics:	Dust: discomfort in the chest. Shortness of breath. Coughing
Carcinogenicity:	Respirable crystalline silica has been classified by IARC and NTP as a known human carcinogen, and classified by ACGIH as a suspected human carcinogen.

Classification

Ingredient Name	OSHA	IARC	ACGIH	NTP
Crystalline Silica (Quartz)	Not listed	1 Carcinogenic to humans	A2	Known to be human Carcinogen
Respirable Tridymite and Cristobalite (Other forms of Crystalline)	Not listed	1 Carcinogenic to humans	-	-
Cement, Portland, chemicals	-	-	A4	-
Cement, slag, chemicals	-	-	A4	

Reproductive toxicity There are no data available.

Safety Data Sheet

Teratogenicity There are no data available.

Specific target organ toxicity (acute exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz)	-	Inhalation	Not reported to have effects
Respirable Tridymite and Cristobalite (Other forms of Crystalline)	-	Inhalation	Not reported to have effects
Calcium oxide	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation
Cement, Portland, chemicals	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation
Cement, slag, chemicals	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation

Specific target organ toxicity (chronic exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz)		Inhalation	May cause damage to organs (respiratory tract and kidneys) through prolonged or repeated exposure
Respirable Tridymite and Cristobalite (Other forms of Crystalline)		Inhalation	May cause damage to organs (lung through prolonged or repeated exposure

Aspiration hazard There are no data available

Potential chronic health effects

General: Prolonged inhalation of respirable crystalline silica may be harmful. May cause damage to organs (lungs) through prolonged or repeated exposure. There are reports in the literature suggesting that excessive crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and the thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Safety Data Sheet

SECTION 12: INTENTIONALLY LEFT BLANK

SECTION 13: DISPOSAL CONSIDERATIONS

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Untreated waste should not be released to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe manner. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff, and contact with soil, waterways, drains and sewers.

SECTIONS 14-15: INTENTIONALLY LEFT BLANK

SECTION 16: OTHER INFORMATION

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Revised Section(s): Not Applicable

Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of Steelike® UHPFRC Mix Design as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with Steelike® UHPFRC Mix Design to produce concrete products. Users should review other relevant material safety data sheets before working with this concrete mix or working on concrete products.

Safety Data Sheet

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Abbreviations

ACGIH — American Conference of Governmental Industrial Hygienists
CAS — Chemical Abstract Service
CERCLA — Comprehensive Emergency Response and Comprehensive Liability Act
CFR — Code of Federal Regulations
DOT — Department of Transportation
GHS — Globally Harmonized System
HEPA — High Efficiency Particulate Air
IATA — International Air Transport Association
IARC — International Agency for Research on Cancer
IMDG — International Maritime Dangerous Goods
NIOSH — National Institute of Occupational Safety and Health
NOEC — No Observed Effect Concentration
NTP — National Toxicology Program
OSHA — Occupational Safety and Health Administration
PEL — Permissible Exposure Limit
REL — Recommended Exposure Limit
RQ — Reportable Quantity
SARA — Superfund Amendments and Reauthorization Act
SDS — Safety Data Sheet
TLV — Threshold Limit Value
TPQ — Threshold Planning Quantity
TSCA — Toxic Substances Control Act
TWA — Time-Weighted Average
UN — United Nations