TriForce™ Cement

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
Date of Issue: 08/08/2023 Version: 1.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: TriForce Cement

Synonyms: Blended hydraulic cement, portland cement, ternary blended cement

1.2. Intended Use of the Product

Use of the Substance/Mixture: Building materials, construction, concrete, mortar

1.3. Name, Address, and Telephone of the Responsible Party

Roanoke Cement Company LLC
6071 Catawba Road
Troutville, VA 24175

Pennsuco Cement Company LLC
11000 NW 121st Way
Medley, FL 33178

Essex Cement Company LLC
182 Calcutta Street
Newark, NJ 07114

titanamerica.com

1.4. Emergency Telephone Number

Emergency Number : 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US Classification

Skin corrosion/irritation Category 1	H314
Serious eye damage/eye irritation Category 1	H318
Skin sensitization, Category 1	H317
Carcinogenicity Category 1A	H350
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335
Specific target organ toxicity (repeated exposure) Category 1	H372

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :

GHS05 GHS07 GHS08

Signal Word (GHS-US) : Danger

Hazard Statements (GHS-US) : H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.
H350 - May cause cancer (inhalation).
H372 - Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation).

Precautionary Statements (GHS-US) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing must not be allowed out of the workplace.

P280 - Wear protective gloves, protective clothing, and eye protection.
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - If inhaled: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P310 - Immediately call a poison center or doctor.
P314 - Get medical advice/attention if you feel unwell.
P321 - Specific treatment (see section 4 on this SDS).
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P363 - Wash contaminated clothing before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

2.3. Other Hazards

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

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Product Identifier	%	GHS US classification
Cement, portland, chemicals	(CAS-No.) 65997-15-1	45 – 75	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335
Slags, ferrous metal, blast furnace	(CAS-No.) 65996-69-2	≤ 50	Not classified
Kaolin, calcined	(CAS-No.) 92704-41-1	≤ 30	Not classified
Ashes, residues	(CAS-No.) 68131-74-8	< 25	Not classified
Silica, amorphous	(CAS-No.) 7631-86-9	15 – 22.5	Not classified
Limestone	(CAS-No.) 1317-65-3	< 15	Not classified
Calcium oxide	(CAS-No.) 1305-78-8	< 6.25	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 3, H402 Aquatic Chronic 3, H412
Iron oxide (Fe2O3)	(CAS-No.) 1309-37-1	0.25 – 5	Not classified
Calcium sulfate dihydrate	(CAS-No.) 13397-24-5	0.9 – 4.5	Not classified
Gypsum (Ca(SO4).2H2O)	(CAS-No.) 13397-24-5	≤ 1.5	Not classified
Carbon	(CAS-No.) 7440-44-0	0 – 1.5	Not classified
Quartz	(CAS-No.) 14808-60-7	0.25 – 1.2375	Carc. 1A, H350 STOT SE 3, H335 STOT RE 1, H372
Chromium, ion (Cr6+)	(CAS-No.) 18540-29-9	< 0.0375	Skin Sens. 1, H317 Carc. 1B, H350 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Particulates not otherwise classified (PNOC)	(CAS-No.) Not applicable		Not classified

Full text of H-phrases: 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: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

First-aid Measures After Skin Contact: Immediately remove contaminated clothing. Immediately flush skin with plenty of water for at least 60 minutes. Get immediate medical advice/attention.

First-aid Measures After Eye Contact: Immediately rinse with water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

First-aid Measures After Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

Symptoms/Injuries: May cause cancer by inhalation. . May cause damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation). Health effects from silica exposures include: silicosis, a disabling, non-reversible and sometimes fatal lung disease; other non-malignant respiratory diseases, such as chronic bronchitis; lung cancer; and kidney disease, including nephritis and end-stage renal disease. May cause respiratory irritation. Skin sensitization. Causes severe skin burns and eye damage.

Symptoms/Injuries After Inhalation: The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Irritation of the respiratory tract and the other mucous membranes. May be corrosive to the respiratory tract.

Symptoms/Injuries After Skin Contact: When this product is wet it is corrosive. May cause an allergic skin reaction. Causes severe irritation which will progress to chemical burns.

Symptoms/Injuries After Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of clinker dust, dry cement powder or with wet cement can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye. Causes permanent damage to the cornea, iris, or conjunctiva.

Symptoms/Injuries After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: Skin sensitization. Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (Inhalation). May cause cancer by inhalation. May cause cancer. Causes damage to organs through prolonged or repeated exposure.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: None known.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable.

Explosion Hazard: Product is not explosive.

Reactivity: Portland Cement reacts slowly with water forming hydrated compounds, releasing heat and producing a strong alkaline solution until reaction is substantially complete. Limestone and Dolomite dissolve in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride. Limestone ignites on contact with fluorine and is incompatible with acids. Limestone generates asphyxiant carbon dioxide gas upon reaction with acids. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Metal oxides. carbon oxides.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not handle until all safety precautions have been read and understood. Do not breathe dust. Do not get in eyes, on skin, or on clothing.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Recover the product by vacuuming, shoveling or sweeping. Transfer spilled material to a suitable container for disposal. Cautiously neutralize spilled solid. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: In the presence of moisture, water, or sweat, slag will react alkaline. Initially causing skin and eye irritation and quickly progressing to chemical burns. Reaction with water will generate heat. May release corrosive vapors.

Precautions for Safe Handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not get in eyes, on skin, or on clothing. Handle empty containers with care because they may still present a hazard.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Store locked up/in a secure area. Store in original container or corrosive resistant and/or lined container.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers. Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride. Slag is incompatible with acids, ammonium salts and aluminum metal. Slag and cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Slag and cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

7.3. Specific End Use(s)

Building materials, construction, concrete, mortar

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), or OSHA (PEL).

Cement, portland, chemicals (65997-15-1)		
USA ACGIH	ACGIH OEL TWA	1 mg/m³ (particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA NIOSH	NIOSH REL (TWA)	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)
USA IDLH	IDLH	5000 mg/m³
USA OSHA	OSHA PEL (TWA) [1]	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)
USA OSHA	OSHA PEL (TWA) [2]	50 mppcf (<1% Crystalline silica) (See 29 CFR 1910.1000 TABLE Z-3)

Limestone (1317-65-3)		
USA NIOSH	NIOSH REL (TWA)	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)
USA OSHA	OSHA PEL (TWA) [1]	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Particulates not otherwise classified (PNOC)		
USA ACGIH	ACGIH OEL TWA	3 mg/m³ Respirable fraction 10 mg/m³ Total Dust
USA OSHA	OSHA PEL (TWA) [1]	5 mg/m³ Respirable fraction 15 mg/m³ Total Dust
USA OSHA	OSHA PEL (TWA) [2]	15 mppcf (respirable fraction) 50 mppcf (total dust) See 29 CFR 1910.1000 Table Z-3

Calcium oxide (1305-78-8)		
USA ACGIH	ACGIH OEL TWA	2 mg/m³
USA NIOSH	NIOSH REL (TWA)	2 mg/m³
USA IDLH	IDLH	25 mg/m³
USA OSHA	OSHA PEL (TWA) [1]	5 mg/m³

Quartz (14808-60-7)		
USA ACGIH	ACGIH OEL TWA	0.025 mg/m³ (respirable particulate matter)
USA ACGIH	ACGIH chemical category	Suspected Human Carcinogen
USA NIOSH	NIOSH REL (TWA)	0.05 mg/m³ (respirable dust)
USA IDLH	IDLH	50 mg/m³ (respirable dust)
USA OSHA	OSHA PEL (TWA) [1]	50 µg/m³ (Respirable crystalline silica)
USA OSHA	OSHA PEL (TWA) [2]	(250)/(%SiO_2+5) mppcf TWA (respirable fraction) (10)/(%SiO_2+2) mg/m³ TWA (respirable fraction) (For any operations or sectors for which the respirable crystalline silica standard, 1910.1053, is stayed or otherwise not in effect, See 20 CFR 1910.1000 TABLE Z-3)

Chromium, ion (Cr6+) (18540-29-9)		
USA OSHA	OSHA PEL (TWA) [1]	5 µg/m³
USA OSHA	OSHA Action Level/Excursion Limit	2.5 µg/m³ (Action level, see 29 CFR 1910.1026)

Calcium sulfate dihydrate (13397-24-5)		
USA ACGIH	ACGIH OEL TWA	10 mg/m³ (inhalable particulate matter (Calcium sulfate)
USA NIOSH	NIOSH REL (TWA)	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)
USA OSHA	OSHA PEL (TWA) [1]	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Gypsum (Ca(SO4).2H2O) (13397-24-5)		
USA ACGIH	ACGIH OEL TWA	10 mg/m³ (inhalable particulate matter (Calcium sulfate)
USA NIOSH	NIOSH REL (TWA)	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)
USA OSHA	OSHA PEL (TWA) [1]	15 mg/m³ (total dust)

		5 mg/m³ (respirable fraction)
Silica, amorphous (7631-86-9)		
USA NIOSH	NIOSH REL (TWA)	6 mg/m³
USA IDLH	IDLH	3000 mg/m³
USA OSHA	OSHA PEL (TWA) [1]	6 mg/m³
USA OSHA	OSHA PEL (TWA) [2]	20 mppcf (80mg/m³/%SiO_2)
Iron oxide (Fe2O3) (1309-37-1)		
USA ACGIH	ACGIH OEL TWA	5 mg/m³ (respirable particulate matter)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA NIOSH	NIOSH REL (TWA)	5 mg/m³ (dust and fume)
USA IDLH	IDLH	2500 mg/m³ (dust and fume)
USA OSHA	OSHA PEL (TWA) [1]	10 mg/m³ (fume) 15 mg/m³ (total dust (Rouge) 5 mg/m³ (respirable fraction (Rouge)

8.2. Exposure Controls

Appropriate Engineering Controls : Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal Protective Equipment : Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection. Face shield.

Materials for Protective Clothing : Chemically resistant materials and fabrics. Corrosion-proof clothing.

Hand Protection : Wear protective gloves.

Eye and Face Protection : Safety glasses with side-shields. Chemical safety goggles and face shield.

Skin and Body Protection : Wear suitable protective clothing.

Respiratory Protection : If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information : When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State : Solid

Appearance : Gray powder

Odor : Odorless

Odor Threshold : No data available

pH : > 11.5 (in water)

Evaporation Rate : No data available

Melting Point : No data available

Freezing Point : No data available

Boiling Point : No data available

Flash Point : No data available

Auto-ignition Temperature : No data available

Decomposition Temperature : No data available

Flammability (solid, gas) : No data available

Vapor Pressure : No data available

Relative Vapor Density at 20°C : No data available

Relative Density : 2.8 – 3.1 (water =1)

Solubility : Water: Slighlty

Partition Coefficient: N-Octanol/Water : No data available

Viscosity : No data available

Particle Size|Rlw:52f988cf-102c-4418-8920-2231c138bdd0| : 0 to 50 micron

9.2. Other Information

No additional information available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Portland Cement reacts slowly with water forming hydrated compounds, releasing heat and producing a strong alkaline solution until reaction is substantially complete. Limestone and Dolomite dissolve in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride. Limestone ignites on contact with fluorine and is incompatible with acids. Limestone generates asphyxiant carbon dioxide gas upon reaction with acids. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction.

10.2. Chemical Stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

10.4. Conditions to Avoid

Direct sunlight, extremely high or low temperatures, and incompatible materials. Avoid formation of dust.

10.5. Incompatible Materials

Strong acids. Strong bases. Strong oxidizers. Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride. Slag is incompatible with acids, ammonium salts and aluminum metal. Slag and cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Slag and cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

10.6. Hazardous Decomposition Products

Thermal decomposition may produce: Metal oxides. Carbon oxides (CO, CO_2). Corrosive vapors.

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

Ashes, residues (68131-74-8)	
LD50 Oral Rat	> 2000 mg/kg
Kaolin, calcined (92704-41-1)	
LD50 Oral Rat	> 2000 mg/kg
LC50 Inhalation Rat	> 2.07 mg/l/4h (No deaths)
Calcium oxide (1305-78-8)	
LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rabbit	> 2500 mg/kg
LC50 Inhalation Rat	> 6.04 mg/l/4h
Quartz (14808-60-7)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 5000 mg/kg
Slags, ferrous metal, blast furnace (65996-69-2)	
LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rat	> 4000 mg/kg
LC50 Inhalation Rat	> 230.1 mg/m³ (Exposure Time: 6 h; Species: Wistar)
Silica, amorphous (7631-86-9)	
LD50 Oral Rat	7900 mg/kg
LD50 Dermal Rabbit	> 2000 mg/kg (No deaths)
LC50 Inhalation Rat	> 58.8 mg/l/4h
Carbon (7440-44-0)	
LD50 Oral Rat	> 10000 mg/kg
Iron oxide (Fe2O3) (1309-37-1)	

LD50 Oral Rat	> 10000 mg/kg

Skin Corrosion/Irritation: Causes severe skin burns.
pH: > 11.5 (in water)
Serious Eye Damage/Irritation: Causes serious eye damage.
pH: > 11.5 (in water)
Respiratory or Skin Sensitization: May cause an allergic skin reaction.
Germ Cell Mutagenicity: Not classified
Carcinogenicity: May cause cancer (inhalation).

Quartz (14808-60-7)	
IARC group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

Chromium, ion (Cr6+) (18540-29-9)	
IARC group	1
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
OSHA Specifically Regulated Carcinogen List	In OSHA Specifically Regulated Carcinogen list.

Silica, amorphous (7631-86-9)	
IARC group	3

Iron oxide (Fe2O3) (1309-37-1)	
IARC group	3

Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): May cause respiratory irritation.
Specific Target Organ Toxicity (Repeated Exposure): Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation).
Aspiration Hazard: Not classified
Symptoms/Injuries After Inhalation: The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Irritation of the respiratory tract and the other mucous membranes. May be corrosive to the respiratory tract.
Symptoms/Injuries After Skin Contact: When this product is wet it is corrosive. May cause an allergic skin reaction. Causes severe irritation which will progress to chemical burns.
Symptoms/Injuries After Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of clinker dust, dry cement powder or with wet cement can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye. Causes permanent damage to the cornea, iris, or conjunctiva.
Symptoms/Injuries After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.
Chronic Symptoms: Skin sensitization. Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (Inhalation). May cause cancer by inhalation. May cause cancer. Causes damage to organs through prolonged or repeated exposure.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General : Not classified.

Kaolin, calcined (92704-41-1)	
LC50 Fish 1	> 100 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static])
EC50 - Crustacea [1]	> 1 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Calcium oxide (1305-78-8)	
LC50 Fish 1	50.6 mg/l

Chromium, ion (Cr6+) (18540-29-9)

LC50 Fish 1	36.2 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
LC50 Fish 2	7.6 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)

Silica, amorphous (7631-86-9)	
LC50 Fish 1	5000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 - Crustacea [1]	7600 mg/l (Exposure time: 48 h - Species: Ceriodaphnia dubia)

Iron oxide (Fe2O3) (1309-37-1)	
LC50 Fish 1	100000 mg/l (Exposure time: 96 h - Species: Danio rerio [static])

12.2. Persistence and Degradability

Trifirce Cement	
Persistence and Degradability	Not established.

12.3. Bioaccumulative Potential

TriForce Cement	
Bioaccumulative Potential	Not established.

Calcium oxide (1305-78-8)	
BCF Fish 1	(no bioaccumulation)

Silica, amorphous (7631-86-9)	
BCF Fish 1	(no bioaccumulation expected)

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information **:** Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods

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

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions.

Ecology - Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

Not regulated for transport

14.2. In Accordance with IMDG

Not regulated for transport

14.3. In Accordance with IATA

Not regulated for transport

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

TriForce Cement	
SARA Section 311/312 Hazard Classes	Health hazard - Specific target organ toxicity (single or repeated exposure) Health hazard - Carcinogenicity Health hazard - Respiratory or skin sensitization Health hazard - Serious eye damage or eye irritation Health hazard - Skin corrosion or Irritation

Cement, portland, chemicals (65997-15-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Limestone (1317-65-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Ashes, residues (68131-74-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Kaolin, calcined (92704-41-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Calcium oxide (1305-78-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Quartz (14808-60-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Slags, ferrous metal, blast furnace (65996-69-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Silica, amorphous (7631-86-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Carbon (7440-44-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Iron oxide (Fe2O3) (1309-37-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

15.2. US State Regulations

Cement, portland, chemicals (65997-15-1)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List

Limestone (1317-65-3)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List

Calcium oxide (1305-78-8)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List

Quartz (14808-60-7)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List

Chromium, ion (Cr6+) (18540-29-9)
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Calcium sulfate dihydrate (13397-24-5)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

Gypsum (Ca(SO4).2H2O) (13397-24-5)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

Silica, amorphous (7631-86-9)
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List

Iron oxide (Fe2O3) (1309-37-1)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List

California Proposition 65

⚠ **WARNING:** This product can expose you to Chromium, ion (Cr6+), which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Quartz (14808-60-7)	X			
Chromium, ion (Cr6+) (18540-29-9)	X	X		

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 08/08/2023

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200

GHS Full Text Phrases:

H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H335	May cause respiratory irritation
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom)