

Safety Data Sheet

Section 1. Identification

1.1 Product Names

- a) Concrete, Permeable and Grid Pavers;
- b) Landscape and Segmental Retaining Walls
- c) Precast Concrete Walls, Steps, Slabs, and Elements

1.2 Manufacturer's Name

Ideal Concrete Block Co.
45 – 55 Power Road
P.O. Box 747
Westford, MA 01886

1.3 Emergency Telephone

978-692-3076

1.4 Telephone

978-692-3076

1.5 Date Prepared

November 9, 2016

1.6 Recommended Use

These concrete block products are used to make walkway, driveway and patio surfaces, retaining walls, and other landscaping structures.

Section 2. Identification of Hazards

2.1 Hazard Classification

Skin Irritation – 2

Eye Irritation – 2B

Skin Sensitizer – 1B

Carcinogen – 1A

Single Target Organ Toxicity – Repeated Exposure - 1

2.2 Hazard Statements/Label Elements

2.2.a Signal Word: Danger

2.2.b Pictograms



2.2.c Hazard Statements

- Causes skin irritation.
- Causes eye irritation.
- May cause an allergic skin reaction.

- Breathing dust from this product may cause cancer from exposure to crystalline silica.
- Causes damage to the lungs, kidneys and immune system through prolonged or repeated exposure to breathing respirable crystalline silica dust.

2.2.d Precautionary Statements

- Wash any skin or eyes that contacts the block dust thoroughly after handling. Wear protective gloves (such as work gloves).
- Wear eye and face protection when generating block dust.
- Avoid breathing dust. Contaminated work clothing must not be allowed out of the workplace.
- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Wear protective adequate respiratory protection if exposures to the dust are anticipated to exceed the OSHA Permissible Exposure Limit.
- Do not eat, drink or smoke when exposed to the dust from this product.

2.2.e Response Statements

- If the dust contacts the skin: Wash with plenty of water.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice /attention.
- If skin irritation or rash occurs: Get medical advice/attention.
- Wash contaminated clothing before reuse.

2.3 Other hazards not otherwise classified: None

2.4 Percent of ingredients with unknown toxicity: 0

Section 3. Composition/Information on Ingredients

	Common Name	CAS No.	Concentration
Portland Cement	Cement Type I/II Blend	65997-15-1	16%
Silica Sand	Quartz	14808-60-7	60 %
Natural Aggregate	Coarse Aggregate	Not Available	Comprises 19% of the mixture
Calcium Sulfate	Gypsum	13397-24-5	
Calcium Magnesium Carbonate	Dolomite	16389-88-1	
Trap Rock	Crushed stone	Not Available	
Admix 1	Calcium Stearate Dispersion	Not Available	< 1%
Concrete Additive	Concrete Dispersant Additive	Not Available	< 1%
Color	Iron Oxide Based	Varies	< 1%

Section 4. First Aid Measures

4.1 First Aid Instructions by Relevant Routes of Exposure

Eye	In case of contact with large amounts of dust, immediately flush eyes with plenty of water for 15 minutes. If the victim complains of further irritation, get medical attention.
Skin	If irritation occurs, flush skin with copious amounts of water and remove any contaminated clothing. Consult a physician if skin irritation persists or a rash occurs.
Inhalation	If breathing is labored or difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing or respiratory arrest occurs, consult medical personnel. Maintain an open airway and loosen any constricting clothing.
Ingestion	Not a normal route of exposure. If a substantial amount is swallowed, do not induce vomiting unless directed to do so by a medical professional. Get medical attention.

4.2 Most important Symptoms

Eye	Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Skin	Causes skin irritation. Wear gloves when handling product to avoid drying and mechanical abrasion of the skin. May cause sensitization by skin contact.
Inhalation	The dust may cause respiratory tract irritation. Chronic exposure to the dust can result in impaired lung function, lung cancer, and/or renal symptoms.

4.3 Medical Care Recommendations

Exposure to respirable silica can cause serious impairment of lung function and/or cancer after chronic exposures.

Section 5. Fire-Fighting Measures

5.1 Suitable Extinguishing Equipment/Methods: Not flammable by OSHA or WHMIS definitions

5.2 Hazardous Products of Combustion: None

5.3 Special Firefighting Precautions: None necessary

Section 6. Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Accidental release of paving block does not present any inherent fire, explosion or acute toxicity hazards. Response to a release would not constitute an emergency response as defined by OSHA. Restrict entry to personnel with proper protective equipment. Measures should be taken to keep dust and debris from being washed into nearby water sources. Personnel that might respond should be protected with respiratory protection described in section 8.

6.2. Methods and Materials for Containment and Clean-up

Methods for Spill Containment: Pick up large pieces and load into a suitable container. Avoid methods such as flushing with water as this could lead to environmental contamination. If the remaining debris is not going to be cleaned immediately, the area should be enclosed to contain water runoff.

Cleanup Procedures: Vacuum or sweep/shovel the debris into appropriate containers. Use wet methods to reduce entrainment of the dust. Dry vacuuming should be filtered with appropriate filters such as high efficiency particulate air (HEPA) filters

Section 7. Handling and Storage

7.1 Precautions for Safe Handling: Avoid generating and breathing dust. Use feasible wet methods and/or local exhaust ventilation to minimize airborne dusts for handling and finishing tasks that could generate airborne dusts. Minimize or eliminate dry sawing, sanding or grinding. When dry methods must be used, use local ventilation or dustless systems. Clean up with methods that minimize dust generation, such as vacuuming or wet sweeping. Practice good housekeeping. Do not permit dust to collect on walls, floors, pavement, sills, ledges, machinery or equipment. Maintain and test ventilation and dust collection equipment. Do not eat or drink in areas where dust is being generated. Do not use compressed air for cleaning clothing or equipment. Launder contaminated clothing before reuse.

7.2 Recommendations for Storage: There are no special storage practices.

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limits (OEL)

Substance	OSHA PEL	ACGIH TLV	NIOSH REL	IDLH
Silica Sand (Quartz)	0.05 mg/m ³ (a)	0.025 mg/m ³ (a)	0.05 mg/m ³ (b)	
Course Aggregate (Quartz)	0.05 mg/m ³ (a)	0.025 mg/m ³ (a)	0.05 mg/m ³ (b)	50 mg/m ³
Portland Cement	15 mg/ m ³ (c) 5 mg/ m ³ (a)	1 mg/ m ³ (a)	None	5000 mg/m ³
Dolomite	15 mg/ m ³ (b) 5 mg/ m ³ (a)	10 mg/ m ³ (b)	None	None
Gypsum	15 mg/ m ³ (b) 5 mg/ m ³ (a)	10 mg/ m ³ (b)	10 mg/ m ³ (b) 5 mg/ m ³ (a)	None
Limestone	15 mg/ m ³ (c) 5 mg/ m ³ (a)	10 mg/ m ³ (c)	10 mg/ m ³ (b) 5 mg/ m ³ (a)	None
Iron Oxide	15 mg/m ³ (c) 5 mg/m ³ (a)	5 mg/m ³	5 mg/m ³ (c)	2500 mg/m ³

Table Footnotes:

- (a) – Respirable fraction of dust. OEL is an 8-hour time weighted average exposure.
- (b) - Respirable fraction of dust. OEL is a 10-hour time weighted average.
- (c) - Total dust concentration. OEL is an 8-hour time weighted average.
- (d) - Total dust concentration. OEL is a 10-hour time weighted average.

8.2 Appropriate Engineering Controls

The principal hazard of this product occurs with exposure to respirable dust. Organize the work to minimize use of mechanical tools such as sawing or grinding which will generate dust. Cutting block with a chisel will greatly reduce generation and exposure to respirable dust. Where mechanical methods are used, wet the work to suppress the dust and/or use mechanical ventilation. Do not use compressed air or dry sweeping to pick up the dust generated from activities such as sawing or grinding.

Table 1 of OSHA's Respirable Crystalline Silica standard, 29 CFR 1926.1053, lists engineering controls for most of the mechanical tool activities involving paving bricks. This table requires the use of specific wet methods and mechanical ventilation for these activities.

8.3 Appropriate Personal Protective Equipment

Respiratory Protection: Only NIOSH approved respiratory protection equipment should be used to protect employees exposed to the dust from this product. All respiratory protection devices should be selected based on an adequate exposure evaluation using industrial hygiene evaluation techniques and their use should be supported by a respiratory protection program. Since it is the respirable fraction of dust that is of medical significance, filters for an atmosphere purifying respirator should be classified by NIOSH as P-100 filtration capability.

Skin and Eye Protection: Portland cement is a skin and eye irritant. Gloves and appropriate skin covering should be worn to reduce dust contact with skin. Eye protection such as safety glasses or goggles should be worn to protect the eyes both from the dust and as a safety precaution to protect the eyes.

Other: Paving block can present a physical hazard when it is dropped. Safety shoes should be worn whenever working with the block to protect toes and feet. Hard hats should be worn if the block is being handled over a worker's head.

Section 9. Physical and Chemical Properties

9.1. Appearance: Fully Cured concrete block	9.9. Upper/Lower Explosive Limits: NA
9.2. Odor: Odorless	9.10. Vapor Pressure: NA
9.3 Odor Threshold: None	9.11. Relative Density: NA
9.4. pH: Not available	9.12 Solubility: NA
9.5. Melting/freezing Point: Not Available	9.13 Partition Coefficient: n-octanol/ water: NA
9.6. Flash Point: None	9.14. Auto-ignition Temp: NA
9.7. Evaporation Rate: None	9.15. Decomposition Temp: NA
9.8. Flammability: None	9.16. Viscosity NA

Section 10. Stability and Reactivity

- 10.1. Reactivity:** No dangerous reactions known under normal conditions of use.
- 10.2. Chemical Stability:** Stable under normal conditions of use.
- 10.3. Possibility of Hazardous Reactions:** No dangerous reactions under normal conditions of use.
- 10.4. Conditions to Avoid:** None.
- 10.5 Incompatible Materials:** None known.
- 10.6 Hazardous Decomposition Products:** None known.

Section 11. Toxicological Information

11.1 Likely Routes of exposure: The blocks are generally used as intact blocks to the extent possible; they are made of sand, stone and Portland cement. Thus, exposure to the chemical hazards would involve exposure to the dust from blocks that are accidentally broken or mechanically disrupted (e.g. grinding or cutting). Ingestion is an unlikely route of exposure as the dust has relatively low toxicity and the taste and texture would not be palatable.

Generated dust, particularly from mechanical generation can easily land on eyes and skin. This dust will also be available to be inhaled. Inhaled dust, depending on its mass and diameter, can be deposited in several areas of the respiratory track. The exposure of greatest concern is particles that are sized so that they can reach the lung and the inner areas of the lung (bronchioles and alveoli).

Routes of Exposure	Exposure Discussion
Ingestion	Ingestion is an unlikely route of exposure as the dust has relatively low toxicity and the taste and texture would not be palatable.
Eyes	Mechanically generated dust can easily reach and settle in unprotected eyes. This dust can cause eye irritation.
Skin	Mechanically generated dust can easily reach and settle on unprotected skin. The dry dust may cause mechanical irritation, but wetted dust (either from external water or from perspiration) could cause wetted Portland cement to contact the skin.
Inhalation	Dust is available to be inhaled. Inhaled dust, depending on its mass and diameter, can be deposited in several areas of the respiratory track. The exposure of greatest concern is particles that are sized so that they can reach the lung and the inner areas of the lung (bronchioles and alveoli).

11.2 Description of the Delayed, Immediate, or Chronic Effects from Short-term and Long-term Exposure

Routes of Exposure	Symptoms
Eyes	Causes eye irritation. Immediate symptoms include discomfort or pain, excess blinking and tearing, possibly with redness and swelling. No long-term symptoms from exposure to concrete dust are known.
Skin	May cause skin irritation, particularly when the dust is wet. Exposure to dry dust from several of the components of the block may cause drying of the skin and mild irritation. Exposure to wet dust (dry dust contacting wet skin or wet dust contacting the skin) could result in some cracking or fissuring of the skin. Skin sensitization from longer term exposures is possible, however it is not the most likely symptom.

Ingestion

This is an unlikely route of exposure. Ingestion of excess material could result in a bowel obstruction.

Inhalation

Repeated inhalation of respirable silica dust can result in development of chronic diseases including lung cancer, silicosis, chronic obstructive pulmonary disease, toxic effects to the kidneys and autoimmune diseases.

11.2.a Acute Toxicity: This product does not meet the criteria for classification as an acute toxin.

Cumulative Product Classification

Oral Toxicity – None	Dermal Toxicity – None	Inhalation Toxicity - None
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Component Toxic Indicators

Component	LD50	Dermal LD50	Inhalation LC 50
Crystalline Silica (Quartz)	Intravenous 500 mg/kg rat	None Available	None Available
Portland Cement	None Available	None Available	None Available
Coarse Aggregate (Quartz)	None Available	None Available	None Available
Dolomite	None Available	None Available	None Available
Gypsum	None Available	None Available	None Available
Limestone	Oral 6450 mg/kg rat/mouse	None Available	None Available
Iron Oxide Red	Oral 10,000 mg/kg rat	Intraperitoneal 5500 mg/kg rat	None Available

11.2.b Skin Corrosion/Irritation: Causes skin irritation.

11.2.c Eye Damage/Eye Irritation: May cause eye irritation.

11.2.d Respiratory or Skin Sensitization: May cause an allergic reaction due to the Portland cement used in mix. However, there is limited data showing that cured concrete dust can cause such a reaction in either the skin or the respiratory track.

11.2.e Carcinogenicity: Respirable dust from free crystalline silica is suspected or known to cause cancer, especially lung cancer, in humans.

Component	IARC	NTP	ACGIH	OSHA	Other
Crystalline Silica	Group 1	Known Human Carcinogen	Suspected Human Carcinogen	Lung Cancer	NIOSH – Cancer causing
All other components	Not listed	Not Listed	Not suspected	Not Listed	None

11.2.f Germ Cell Mutagenicity: The current data does not meet the criteria for classification for germ cell mutagen.

11.2.g Reproductive Toxicity: The current data does not meet the criteria for classification to be considered toxic to the unborn fetus (teratogenic), cause mutations to cells (mutagenic) or to affect worker fertility.

11.2.h Specific Target Organ Toxicity – Single Exposure: No additional single exposure target organ effects beyond those described above.

11.2.i Specific Target Organ Toxicity – Repeated or Prolonged Exposure: Repeated or prolonged exposure to respirable free crystalline silica dust has been shown to lead to several serious and disabling lung conditions, including silicosis, chronic obstructive pulmonary disease (COPD), emphysema, and chronic bronchitis. Silicosis is a progressive fibrotic disease that is disabling and can lead to death. COPD, emphysema, and chronic bronchitis are other diseases of the inner lung that progressively deprive the victim of the ability to take in oxygen.

Free crystalline silica has been associated with chronic kidney disease. There is evidence that silica can cause an inflammation of the small and medium blood vessels (granulomatosis with polyangiitis) that can fatally damage the kidneys and the lungs.

Silica has also been associated with several autoimmune diseases such as scleroderma (a chronic systemic autoimmune disease characterized by hardening of the skin and organ tissues), rheumatoid arthritis (a long lasting condition affecting the joints), and systemic lupus erythematosus (a condition where the body's immune system mistakenly attacks healthy tissue in many parts of the body).

11.2.j Aspiration Hazard: The current data does not meet the criteria for classification as an aspiration hazard.

Section 12. Ecological Information

12.1 Acute Aquatic Toxicity:

Component	Fish	Algae	Crustaceans	Plants
Silica Sand (Quartz)	No Data Available	No Data Available	No Data Available	No Data Available
Course Aggregate (Quartz)	No Data Available	No Data Available	No Data Available	No Data Available
Portland Cement	No Data Available	No Data Available	No Data Available	No Data Available
Dolomite	No Data Available	No Data Available	No Data Available	No Data Available
Gypsum	No Data Available	No Data Available	No Data Available	No Data Available
Limestone	No Data Available	No Data Available	No Data Available	No Data Available

12.2 Chronic Aquatic Toxicity: Low toxicity

Component	Fish	Algae	Crustaceans	Plants
Silica Sand (Quartz)	No Data Available	No Data Available	No Data Available	No Data Available
Course Aggregate (Quartz)	No Data Available	No Data Available	No Data Available	No Data Available
Portland Cement	No Data Available	No Data Available	LC 50 = 0.089 mg/l	No Data Available
Dolomite	No Data Available	No Data Available	No Data Available	No Data Available
Gypsum	> 100 mg/L	No Data	> 1970 mg/L	No Data
Limestone	No Data Available	No Data Available	No Data Available	No Data Available

12.3 Persistence and Biodegradation: Persistent and non-biodegradable

Component	Test	Result
Silica Sand (Quartz)	Qualitative analysis	Persistent
Course Aggregate (Quartz)	No Data Available	Persistent
Portland Cement	Qualitative analysis	Persistent
Dolomite	No Data Available	Persistent
Gypsum	No Data Available	Persistent
Limestone	No Data Available	Persistent
Iron Oxide	No Data Available	Persistent

12.4 Bioaccumulation Potential: Limited data available. All ingredients are listed as non-bioaccumulative on Canada's Domestic Substances List.

Component	Test (log K _{ow} /BCF)	Result
Silica Sand	No Data Available	Not Bio-accumulative
Portland Cement	No Data Available	Not Determined
Dolomite	No Data Available	Not Bio-accumulative
Gypsum	No Data	Not Bio-accumulative
Limestone	No Data	Not Determined
Iron Oxide	No Data Available	Not Bio-accumulative

12.5. Potential for Movement in Soil: No data available for concrete block in soil. However, cured concrete is not water soluble, so movement in soil is not expected.

12.6. Other Adverse Effects: None

Section 13. Disposal Considerations

13.1 Recommended Disposal Methods and Containers: These are concrete products that should be disposed of as normal construction debris following federal, state and local regulations. They cannot be disposed of by incineration. It may be possible to repurpose block to other landscaping uses.

13.2 Physical/Chemical Properties Affecting Disposal: None

13.3 Special Precautions for Landfills/Incineration: None

Section 14. Transportation Information

14.1 Surface Transportation (DOT): Not Regulated

UN Number None

Proper Shipping Name: None

Transport Hazard Class(es): None

Packing Group: None

14.2 Air Transportation (IATA): Not Regulated

14.3 Marine Transportation (IMDG): Not Regulated

14.4 Special Precautions: None

14.5 Guidance for Bulk Transport (MARPOL 78/73 and the IBC Code):
None

Section 15. Regulatory Information

15.1 Chemical Inventory Status List 1

Component	TSCA	DSL
Silica Sand	Yes	Yes
Portland Cement	Yes	Yes
Dolomite	Yes	Yes
Gypsum	Yes	Yes
Limestone	Yes	Yes

15.2 U.S. Federal Regulations

TSCA: 12(b) Not Listed **8(d)** Not Listed

SARA 304: Not Listed

SARA 311/312 Hazardous Categorization: Not Listed

SARA 313: Not Listed

40 CFR 261 Hazardous Waste: Not Listed

Clean Air Act:

Component	Hazardous Air Pollutants Data	Ozone Depleting Class 1 Substances	Ozone Depleting Class 2 Substances	Risk Management Plan
Sand	None	None	No	No
Portland Cement	None	None	No	No

Section 16. Other Information

Prepared By: Frederick W. Malaby, CIH, CSP
Cashins & Associates, Inc.

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