

SAFETY DATA SHEET

Section 1: Identification

1.1 Product identifier:

St Marys CemPlus

Alternate names:

- Slag Granules
- Slag Cement
- Ground Granulated Blast Furnace Slag (GGBFS)
- Granulated Blast Furnace Slag (GBFS)

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Identified uses:

Industrial uses in manufacture of concrete for building materials and pavement.

Uses advised against:

Keep out of reach of children.

1.3 Details of the supplier of the Safety Data Sheet:

St. Marys Cement
55 Industrial Street
Toronto, ON
M4G 3W9

Information Telephone Numbers

In Canada: 1-800-268-6148

In USA: 1-800-462-9157 ext. 537

1.4 Emergency telephone number:

In Canada: 1-613-996-6666 CANUTEC (Call Collect or *666 Cellular)

In USA: 1-800-462-9157

Section 2: Hazards Identification

2.1 Classification of the substance or mixture:

Skin Irritation Cat. 2; H315

Eye Damage Cat. 1; H318

Specific Target Organ Toxicity, Single Exposure, Cat. 3; H335

Carcinogenicity Cat. 1; H350 (inhalation)

Specific Target Organ Toxicity, Repeated Exposure, Cat. 1; H372 (inhalation)

2.2 Label elements:



Danger.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H335: May cause respiratory irritation.

H350: May cause cancer by inhalation.

H372: Causes damage to lungs through prolonged or repeated exposure by inhalation.

Prevention

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P260: Do not breathe dusts.

P264: Wash hands and exposed skin thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/ protective clothing and eye protection/face protection.

Response

P302+ P352: IF ON SKIN: Wash with plenty of water.

P321: Specific treatment: Caustic burns must be treated promptly by a doctor.

P332+P313: If skin irritation occurs: Get medical advice/attention.

P362+P364: Take off contaminated clothing and wash it before reuse.

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Section 2: Hazards Identification

2.2 Label elements: (continued)

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310: Immediately call a POISON CENTER or doctor.
 P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P308+P313: If exposed or concerned: Get medical advice/attention.

Storage

P405: Store locked up.

Disposal

P501: Recycle and or dispose of contents/containers in accordance with local/regional/national/ international regulations.

2.3 Other hazards:

Dusts from this product, when combined with water or sweat, produce a corrosive alkaline solution. The potential exists for static build-up and static discharge when moving cement powders through a plastic, nonconductive, or non-grounded pneumatic conveyance system. Static discharge may result in damage to equipment and injury to workers.

Section 3: Composition/Information on Ingredients

<u>Chemical Name</u>	<u>CAS No.</u>	<u>Wt. %</u>	<u>GHS Classification</u>
Slags, ferrous metal, blast furnace	65996-69-2	100	Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335
Crystalline silica	14808-60-7	0.1	Carc. 1; H350 STOT RE 1; H372
Chromate compounds	Not available	<0.1	Not available
Nickel compounds	Not available	<0.1	Not available

Section 4: First Aid Measures

4.1 Description of first aid measures:

Precautions: First aid providers should avoid direct contact with this chemical. Wear chemical protective gloves, if necessary. Take precautions to ensure your own safety before attempting rescue, (e.g. wear appropriate protective equipment).

Inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical help if coughing or other symptoms persist. Inhalation of large amounts of cement dust requires immediate medical attention. Call a poison center or doctor. 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.

Eye Contact: Immediately rinse eyes cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or Doctor. Take care not to rinse contaminated water into the unaffected eye or onto face.

Skin Contact: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention immediately. Heavy exposure to cement 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 cement. 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 promptly by a doctor.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention immediately or transport victim to an emergency treatment center.

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Section 4: First Aid Measures, continued

4.2 Most important symptoms and effects, both acute and delayed:

Inhalation: High concentrations of airborne dusts are severely irritating to the upper respiratory tract with symptoms such as coughing, sneezing and shortness of breath. Long-term inhalation exposure to dusts containing respirable size crystalline silica can cause silicosis and lung cancer.

Eye Contact: Severely irritating in contact with eyes. Causes eye damage which may be permanent and may cause blindness. Glassy particles can cause damage to eye tissue by mechanical abrasion.

Skin Contact: Dusts from this product, when combined with water or sweat, produce a severely irritating alkaline solution and burning of the skin. Symptoms include pain, burns, skin dryness, cracking and eczema.

Glassy particles can cause damage to skin by mechanical abrasion.

May cause an allergic skin reaction from trace amounts of sensitizing metals in lime.

Ingestion: Severely irritating to the mouth, throat and gastro-intestinal system if swallowed. Symptoms may include severe pain and burning of the mouth, throat, esophagus and gastrointestinal tract with nausea, vomiting and diarrhea. If aspiration into the lungs occurs during vomiting, severe lung damage may result.

4.3 Indication of any immediate medical attention and special treatment needed:

Corrosive material; get immediate medical advice/attention if inhaled, if swallowed or if in eyes.

Section 5: Firefighting Measures

5.1 Extinguishing media:

Use extinguishing media appropriate to the surrounding fire conditions. Use flooding quantities of water as a spray.

Unsuitable extinguishing media: Use caution when using water. Do not get water inside closed containers; contact with water will generate heat. Water jet may cause spattering of the corrosive solution. Use caution when using CO₂; it may scatter the dry powder.

5.2 Special hazards arising from the substance or mixture:

Product is not flammable or combustible.

Bulk powder of this product may heat spontaneously when damp with water.

Corrosive; reacts with water releasing heat and forming an alkaline solution.

5.3 Advice for firefighters:

As for any fire, evacuate the area and fight the fire from a safe distance. Firefighters must wear full protective equipment including self-contained breathing apparatus with chemical protection clothing when firefighters are exposed to decomposition products from this material.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Wear adequate personal protective equipment, including an appropriate respirator as indicated in Section 8. Isolate spill area, preventing entry by unauthorized persons. Do not touch spilled material. Do not breathe dusts.

6.2 Environmental precautions:

Avoid releases to the environment and prevent material from entering sewers, natural waterways or storm water management systems.

6.3 Methods and material for containment and cleaning up:

Move containers from spill area. Avoid dust generation and prevent wind dispersal. Do not dry sweep or blow with compressed air. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labelled waste container. Small spills may be picked up with a damp mop.

6.4 Reference to other sections:

See Section 8 for information on selection of personal protective equipment.

See Section 13 for information on disposal of spilled product and contaminated absorbents.

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Section 7: Handling and Storage

7.1 Precautions for safe handling:

Before handling, it is important that engineering controls are operating, protective equipment requirements and personal hygiene measures are being followed. People working with this chemical should be properly trained regarding its hazards and its safe use.

Obtain special instructions before use.

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

Do not breathe dusts.

Wash hands and exposed skin thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Prevent eye contact: Wear protective gloves/ protective clothing and eye protection/face protection.

Static Hazard: Properly ground all pneumatic conveyance systems. The potential exists for static build-up and static discharge when moving cement powders through a plastic, nonconductive, or non-grounded pneumatic conveyance system. Static discharge may result in damage to equipment and injury to workers.

Do not enter a confined space that stores or contains cement unless appropriate procedures and protections are in place. Cement can build up or adhere to the walls of a confined space and then release or fall suddenly (engulfment).

7.2 Conditions for safe storage, including any incompatibilities:

Store in a dry, well-ventilated area, away from incompatible materials. Keep containers closed. Protect from moisture/humidity.

Store in a place accessible by authorized persons only.

Store away from food and animal feed.

Keep out of reach of children.

Section 8: Exposure Controls / Personal Protection

8.1 Control parameters:

Occupational Exposure Limits: Consult local authorities for acceptable exposure limits.

<u>Ingredient</u>	<u>ACGIH TLV</u> (8-hr. TWA)	<u>U.S. OSHA PEL</u> (8-hr. TWA)	<u>Ontario (Canada) TWA</u>
Slags, ferrous metal, blast furnace	Not established	Not established	Not established
Crystalline silica (Quartz)	0.025 mg/m ³ (respirable)	quartz (total dust): 30 mg/m ³ / (%SiO ₂ + 2) quartz (respirable): 10 mg/m ³ / (%SiO ₂ + 2)	0.1 mg/m ³ (respirable) Designated Substance
Particles, not otherwise specified	10 mg/m ³ (total dust) 3 mg/m ³ (respirable)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable)	Refer to ACGIH TVL

* value for particulate matter containing no asbestos and less than 1% crystalline silica.

Other Exposure Limits:

Russia Occupational Exposure Limit for Slags, ferrous metal, blast furnace = 6 mg/m³

8.2 Exposure controls:

Engineering Controls: Handle product in closed system or area provided with appropriate exhaust ventilation. Handle in accordance with good industrial hygiene and safety practice. Ensure regular cleaning of equipment, work area and clothing.

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection. Have equipment available for use in emergencies such as spills or fire.

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Section 8: Exposure Controls / Personal Protection, continued

Personal Protection: Workers must comply with the Personal Protective Equipment requirements of the workplace in which this product is handled.

Eye/Face Protection: Wear approved safety glasses with side-shields or chemical safety goggles. Wear a face-shield or full-face respirator when needed to prevent exposure to airborne dusts. Contact lenses should not be worn.

Skin Protection: Wear chemical protective gloves, suit, and boots to prevent skin exposure. Waterproof and cut/abrasion-resistant rubber, such as Heavyweight nitrile gloves, boots and body-covering clothing may be used to prevent dermal exposures to this material and for cleaning and maintenance operations. Evaluate resistance under conditions of use and maintain protective clothing carefully. Contact safety supplier for specifications.

Respiratory Protection: Approved respiratory protective equipment (RPE) is required. An approved respirator, N95 rating or higher, must be available in case of accidental releases. Consult with respirator manufacturer to determine respirator selection, use and limitations.

A respiratory protection program that meets the regulatory requirement, such as OSHA's 29 CFR 1910.134, ANSI Z88.2 or Canadian Standards Association (CSA) Standard Z94.4, must be followed whenever workplace conditions warrant a respirator's use.

Other Protection: Have a safety shower and eyewash fountain readily available in the work area.

Every attempt should be made to avoid skin and eye contact with cement. Do not get powder 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 cement mixtures. Wash clothing and shoes thoroughly before reuse.

Do not enter a confined space that stores or contains cement unless appropriate procedures and protections are in place. Cement can build up or adhere to the walls of a confined space and then release or fall suddenly (engulfment).

Do not eat, drink or smoke where this material is handled, stored and processed. Wash hands thoroughly before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Environmental Exposure Controls: Emissions from ventilation or work process equipment should be monitored to ensure they comply with the requirements of environmental protection legislation.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:

Appearance:	Solid; grey or white powder
Odour:	No distinct odour
Odour threshold:	Not applicable
pH:	8-11 (ASTM D1293-95)
Melting point/freezing point:	Not applicable
Initial boiling point and boiling range:	Not applicable
Flash point:	Not applicable
Flammability	Not flammable or combustible
Auto-ignition temperature:	Not available
Upper/lower flammability or explosive limits:	Not applicable
Explosive properties:	Not applicable
Oxidising properties:	Not applicable
Sensitivity to mechanical impact:	Not applicable
Sensitivity to static discharge:	Potential for static build-up and static discharge from powders in plastic, nonconductive or non-grounded pneumatic conveyance systems
Evaporation rate:	Not applicable
Vapour pressure:	Not applicable
Vapour density:	Not applicable
Relative density:	2.92 (water = 1)
Solubility (ies):	Slightly soluble in water (0.1 – 1%)
Partition coefficient (n-octanol/water):	Not applicable
Decomposition temperature:	Not available
Viscosity:	Not applicable

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Section 10: Stability and Reactivity

10.1 Reactivity:

Reacts slowly with water forming hydrated compounds, releasing heat and a strongly alkaline solution.

10.2 Chemical Stability:

Stable at normal ambient and anticipated storage and handling conditions.

10.3 Possibility of Hazardous Reactions:

Aqueous solutions are highly alkaline and may corrode aluminum.

10.4 Conditions to Avoid:

Avoid unintentional contact with water / moisture and with strong acids and other incompatible materials.

10.5 Incompatible Materials:

Strong acids - Incompatible with strong acids; may react vigorously.

Water - reaction generates heat.

Aluminum – Aluminum powder and other alkali earth elements will react in the presence of water liberating extremely flammable hydrogen gas.

Reacts with Ammonium salts.

10.6 Hazardous Decomposition Products:

In contact with water and moisture, generates corrosive calcium hydroxide.

Section 11: Toxicological Information

11.1 Likely routes of exposure:

Eye and Skin contact, Inhalation of dust.

11.2 Acute toxicity data:

Data not available for the mixture.

Skin corrosion / irritation:

Based on information for Slag Cement : Causes skin irritation. May cause caustic burns when in prolonged contact with the skin.

Irritating or corrosive to mouth, throat and gastro-intestinal tract.

Serious eye damage / irritation:

Based on information for Slag Cement: Causes serious eye damage and possible blindness. Damage may be permanent if treatment is not immediate.

STOT (Specific Target Organ Toxicity) Single Exposure:

Breathing dusts causes respiratory irritation. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust containing slag cement.

Aspiration hazard:

This material is corrosive; if aspiration into the lungs occurs during vomiting, severe lung damage may result.

11.3 Chronic toxicity:

STOT (Specific Target Organ Toxicity) Repeated Exposure:

Prolonged and repeated breathing of dust may cause lung disease. The extent and severity of lung injury correlates with the length of exposure and dust concentration. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust containing slag cement.

Contains crystalline silica. Long-term exposure to fine airborne crystalline silica dust may cause silicosis a form of pulmonary fibrosis that can cause shortness of breath, cough and reduced lung function. Particles with diameters less than 1 micrometer are considered most hazardous.

Respiratory and / or skin sensitization:

Product may contain trace concentrations (<0.1%) of Chromate and Nickel compounds that can cause an allergic skin reaction. Further skin contact may result in inflammation, rash and itching.

Not known to be a respiratory sensitizer.

Germ cell mutagenicity:

Not available

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Section 11: Toxicological Information, continued

Reproductive effects:

Not available

Developmental effects:

Not available

Effects on or via lactation:

Data are not available.

Carcinogenicity:

Slag cement is not classifiable as a human carcinogen. Crystalline silica is considered a hazard by inhalation. IARC has classified crystalline silica as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity.

Interactions with other chemicals:

Not available

Section 12: Ecological Information

12.1 Toxicity:

Harmful to aquatic life. Contact with water forms an alkaline solution. Avoid release to the environment.

12.2 Persistence and degradability:

Not available

12.3 Bioaccumulative potential:

Not available

12.4 Mobility in soil:

Not available

12.5 Other adverse effects:

Not available

Section 13: Disposal Considerations

13.1 Disposal methods:

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.

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Section 14: Transport Information

- 14.1 UN Number**
Not hazardous for transport
- 14.2 UN proper shipping name**
Not applicable
- 14.3 Transport hazard class(es)**
Not applicable
- 14.4 Packing group**
Not applicable
- 14.5 Environmental hazards**
Not available
- 14.6 Special precautions for user**
Not available
- 14.7 U.S. Hazardous Materials Regulation (DOT 49CFR):**
Not regulated except for transport by aircraft.
- 14.8 Canada Transportation of Dangerous Goods (TDG) Regulations:**
Not regulated except for transport by aircraft.

Section 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

USA

TSCA Status:

Substances are listed on the TSCA inventory or are exempt.

OSHA HazCom 2012 Hazards:

Skin Irritation Cat. 2
Eye Damage Cat. 1
Specific Target Organ Toxicity, Single Exposure, Cat. 3
Carcinogenicity Cat. 1 (inhalation)
Specific Target Organ Toxicity, Repeated Exposure, Cat. 1 (inhalation)

Canada

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

WHMIS 1988 Classification:

D2A - Other toxic effects – Untested mixture containing Crystalline silica.
E – Corrosive – Mixture generates Calcium hydroxide in contact with water

NSNR Status:

Substances are listed on the on the DSL or are exempt.

International Inventories:

Australia: Substances are listed on the Inventory of Chemical Substances (AICS).

China: Not available

European Union: Listed on EINECS.266-002-0

Japan: Not available.

Korea: Not available.

Mexico: Not available.

New Zealand: Substances are listed on the Inventory.

Philippines: Not available.

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Section 16: Other Information

Revision date:

June 19, 2015

References and sources for data:

CCOHS, Cheminfo
RTECS, Registry of Toxic Effects of Chemical Substances
NIOSH, Pocket Guide to Chemical Hazards.

Methods for classification of mixtures:

USA: Haz Com Standard 29 CFR 1910.1200 (2012)
Canada: Controlled Products Regulations.
UNECE, Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Legend to abbreviations:

ACGIH – American Conference of Governmental Industrial Hygienists
GHS- Globally Harmonized System for Classification and Labeling.
OEL– Occupational exposure limit
OSHA - Occupational Safety and Health Administration
PBT- Persistent, Bioaccumulative and Toxic substances
TWA – Time weighted average
TLV - Threshold Limit Value
vPvB- Very Persistent, very Bioaccumulative substances
WHMIS – Workplace Hazardous Materials Information System.

Additional information:

Slag cements should only be used by trained, knowledgeable persons. This safety data sheet is believed to provide a useful summary of the hazards of Slag cement as it is commonly used, but cannot anticipate and provide all of the information that might be needed in every situation. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with cement products.

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