

SECTION I - PRODUCT INFORMATION

Distributor's Name: BELL & MACKENZIE CO. LTD.	Emergency Phone #: (905) 527-6000
Distributor's Address: 500 Sherman Ave. N., P.O. Box 844, L.C.D. #1, Hamilton, Ontario L8N 3N9	
Common Name: CRYSTALLINE SILICA, SILICA SAND	Chemical Family: Silicon Dioxide, CAS #14808-60-7
Trade Name & Synonyms: FLINT SILICA, #4751 SILICA, #650 SILICA, #612 SILICA, #430 SILICA, #16 SILICA, SIL-CO-SIL FLOUR, #705 SILICA, #530 SILICA, #505 SILICA, #335 SILICA, #00N SILICA, #0, #1, #2, #3 SILICAS FLINT SHOT SILICA, #20 SILICA, #25 SILICA, #12 SILICA, #2010 SILICA, #2075 SILICA, #2095 SILICA, #620 SILICA, #3070 SILICA and all other Silica or Lake Sands as so designated.	
Product Use(s): Sandblast, Foundry, Mixes, Non-Slip and Filtration Filler	

SECTION II - HAZARDOUS INGREDIENTS

Material or Components	%	ONT. REG #845-TWAEV :	0.10 mg/m ³
Silica, Crystalline Quartz	>90	OSHA-PEL, MSHA :	10 mg/m ³ / %SiO ₂ + 2
		ACGIH (TLV) :	.05 mg/m ³
Exposure to respirable airborne crystalline silica should not exceed an 8 hour time-weighted average limit.			
NIOSH recommended standard maximum permissible concentration = 0.05 mg/m ³ (respirable free silica) as determined by a full shift sample up to 10-hour working day, 40-hour work week.			

SECTION III - PHYSICAL DATA / CHEMICAL CHARACTERISTICS

Physical State:	Sand or pebbles or ground	Melting Point:	3110°F/1710°C
Appearance and Odor:	White or Tan - No Odor	Freezing Point:	no reference
Odor Threshold (ppm):	no reference	pH Level:	6 - 7
Specific Gravity (H ₂ O = 1):	2.65	% Volatile by Volume:	no reference
Vapour Pressure (mm):	10mm @ 1730°C	Solubility in Water:	Insoluble
Vapour Density (Air = 1):	no reference	Coefficient of water/oil distribution:	no reference
Evaporation Rate (Butyl Acetate = 1)	0	Boiling Point:	2230°C

SECTION IV - FIRE & EXPLOSION HAZARD DATA

Special Fire Fighting Procedures:	None	Flammable Limits:	Fully oxidized, will not burn.
Unusual Fire & Explosion Hazards:	None	Flash Point:	Fully oxidized, will not burn.
Transportation of Dangerous Goods Classification:	not regulated	Extinguishing Media:	None required
		Explosion Limits:	no reference

APPROVED MATERIAL

 JAN 27 2014

 MSDS # 10752

 APPROVED BY

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SECTION IV - continued

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NIOSH: National Institute for Occupational Health & Safety
OSHA: Occupational Safety & Health Agency
ACGIH: American Conference of Governmental Industrial Hygienists
PEL: Permissible Exposure Limited
MSHA: Mining Safety & Health Act
TLV: Threshold Limit Value

SECTION V - REACTIVITY DATA

Stability:	Stable	Reactivity & under what conditions:
Hazardous Polymerization:	Will not occur	Non-reactive except for conditions below
Hazardous Decomposition Products:	Dissolves in Hydrofluoric Acid & produced a corrosive gas - silicon tetrafluoride	
Incompatibility (Materials to Avoid):	Contact with powerful oxidizing agents such a fluorine, chlorine trifluoride (ClF ₃) manganese trioxide (MnO ₃), oxygen difluoride (OF ₂), may cause fires.	

SECTION VI - TOXICOLOGICAL PROPERTIES

Emergency Overview -

Crystalline Silica is a chemically inert, non-combustible mineral. A single exposure will not result in serious adverse effects. Excessive inhalation of dust may cause lung disease, silicosis, with symptoms of shortness of breath and reduced pulmonary function. Crystalline Silica (quartz) is not known to be an environmental hazard.

Potential Health Effects -

Silicosis - Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs. Silicosis may be progressive, it may lead to disability and death.
Cancer - Crystalline silica (quartz) inhaled from occupational sources is classified as carcinogenic to humans.
Autoimmune Diseases - There are some studies that show excess numbers of cases of scleroderma and other connective tissue disorders in workers exposed to respirable crystalline silica.
Tuberculosis - Silicosis increases the risk of tuberculosis.
Nephrotoxicity - There are several studies suggesting that exposure to respirable crystalline silica of that the disease silicosis is associated with the increased incidence of kidney disorders.

Signs and Symptoms of Exposure -

There are generally no signs or symptoms of exposure to crystalline silica (quartz). Often, chronic silicosis has no symptoms. The symptoms of chronic silicosis, if present, are shortness of breath, wheezing, cough and sputum production. The symptoms of acute silicosis are the same; additionally, weight loss and fever are associated with acute silicosis. The symptoms of scleroderma include thickening and stiffness of the skin, particularly in the fingers, shortness of breath, difficulty swallowing and joint problems.

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SECTION VI - continued

Medical Conditions Generally Aggravated by Exposure -
 The condition of individuals with lung disease (e.g. bronchitis, emphysema, chronic obstructive pulmonary disease) can be aggravated by exposure.

Carcinogenicity:	NTP : Yes	OSHA Resulated: No	IARC Monographs: Yes
Routes of Entry:	Skin: No	Inhalation: Yes	Ingestion: No

The National Toxicology Program (NTP) published its Ninth Annual Report on Carcinogens (May 2000) classified "silica, crystalline (respirable)" as a known human carcinogen.
 International Agency of Research in Cancer (IARC) Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans (Vol 68, 1997) concludes that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the forms of quartz and cristobalite (Group 1) in certain industrial circumstances, but that carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity of distribution of its polymorphs.

Health Hazards (Acute and Chronic): Prolonged exposure to respirable crystalline quartz may cause delayed (chronic) lung injury (silicosis). Acute or rapidly developing silicosis may occur in a short period of time in heavy exposure. Silicosis is a form of disabling pulmonary fibrosis, (scarring) of the lung which can be progressive and may lead to death.

Medical Conditions Aggravated: Pulmonary function may be reduced by inhalation of respirable crystalline silica. Also lung scarring produced by such inhalation may lead to a progressive massive fibrosis of the lung which may aggravate other pulmonary conditions and diseases and which increases susceptibility to pulmonary tuberculosis. Progressive massive fibrosis may be accompanied by right heart enlargement, heart failure, and pulmonary failure. Smoking aggravates the effects of exposure.

Signs & Symptoms of Exposure: Undue breathlessness, wheezing, cough and sputum production.

Hazardous Material Information Systems (HMIS) Rating:

Health Hazard Rating	1*	Flammability Hazard	0
Reactivity Hazard Rating	0	Personal Protective Equipment	E**

* - Chronic exposure to respirable size silica will result in silicosis

** - Comply with special OSHA respiratory protection if sandblasting

D.O.T.	Not Regulated	SARA Title III.	None Listed
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CANADIAN WHIMIS CLASSIFICATION - Class D, Division 2, Subdivision A
 (Very Toxic Material causing other Toxic Effects)

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SECTION VII - PREVENTATIVE MEASURES AND PRECAUTIONS FOR SAFE HANDLING & USE

Steps to be taken in case material is released or spilled: Use dustless methods (vacuum) and place into closable container for disposal, or flush with water. Do no dry sweep. Wear protective equipment specified below.	
Waste Disposal Method:	Dispose in accordance with Federal, State/Provincial and Local regulations.
Other Precautions:	Do not breathe dust. Use adequate ventilation and dust collection. Keep airborne dust concentrations below PEL. Do not rely on your sight to determine if dust is in the air. Silica may be in the air without a visible dust cloud. If dust cannot be kept below permissible limits, wear a respirator approved for silica dust when using, handling, storing or disposing of this product or bag. Practice good housekeeping. Do not permit dust to collect on walls, floor, sill, ledges, machinery, or equipment. Maintain, clean, and fit test respirators in accordance with OSHA regulations. Maintain and test ventilation and dust collection equipment. Wash or vacuum clothing that has become dusty.
Respiratory Protection:	PEL = Permissible Exposure Limit
Particulate Concentration	MINIMUM RESPIRATORY PROTECTION
Up to 5 x PEL	Any NIOSH certified dust respirator.
Up to 10 x PEL	Any particulate respirator, except single-use or quarter-mask respirator Any fume respirator or high efficiency particulate filter respirator. Any supplied-air respirator. Any self-contained breathing apparatus.
Up to 20 x PEL	Quarter or half mask respirator with replaceable dust filter, or single use (valve type) dust respirator.
Up to 100 x PEL	A high efficiency particulate filter respirator with a full facepiece. Any supplied-air respirator with a full facepiece, helmet or hood. Any self-contained breathing apparatus with a full facepiece.
Up to 200 x PEL	A powered air-purifying positive pressure respirator with a high efficiency particulate filter. A NIOSH Type C supplied-air respirator operated in pressure-demand or other positive pressure or continuous-flow mode.
Up to and Greater than 500 x PEL or entry and escape from unknown concentrations.	Self-contained breathing apparatus with a full facepiece operated in pressure-demand or other positive pressure mode. A combination respirator which includes a Type C supplied-air respirator with a full facepiece operated in pressure-demand or other positive pressure continuous flow mode and an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive pressure mode.

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SECTION VII - continued

Abrasive Blasting	Any Type CE, supplied-air respirator with a full facepiece, hood, or helmet, operated in a positive-pressure mode.
* Only NIOSH approved or MSHA approved equipment should be used.	
Ventilation:	Use sufficient local exhaust to reduce the level of respirable dust to the PEL. Maintain and test ventilation and dust collection equipment.
Eye Protection:	Wear protective shield (safety glasses) when exposed to dust particles.
Protective Gloves:	Standard abrasive blaster's gloves.
Other Protective Equipment:	Use appropriate abrasive blasting protective equipment.
Work Hygiene Practices:	Avoid creating and breathing dust.
Other Precautions:	We recommend that smoking be prohibited in all areas where respirators must be used.

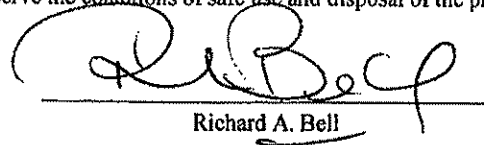
SECTION VIII - EMERGENCY & FIRST AID PROCEDURES

Eye Contact:	Immediately flush eyes thoroughly with water or an ophthalmic saline solution.
Skin Contact:	Wash skin with cold water & soap if irritation occurs.
Inhalation:	Remove affected person(s) to fresh air source.
Oral Intake:	Rinse mouth out with water.
<i>If symptoms persist, contact a physician or other medical personnel.</i>	

SECTION IX - PREPARATION DATE OF THE MSDS

"The opinions expressed herein have been compiled from sources which the company believes to be dependable, and is accurate and reliable for the normal and intended use of this product as of the date of this Material Safety Data Sheet. However, the company makes no warranty of any kind with respect to the accuracy or completeness of the data and assumes no responsibility for any liability or damages relating thereto. It is the user's obligation to determine and observe the conditions of safe use and disposal of the product by their operations."

Date of Preparation: February 1, 2012


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