

SECTION 1: PRODUCT/COMPANY INFORMATION

Product Name/Identifiers:	Natural Sand or Gravel	Supplier/Manufacturer:	Lehigh Hanson Materials Limited
Chemical Name:	Sand and Gravel	Address:	12640 Inland Way Edmonton, AB T5V 1K2
Trade Name and Synonyms:	Sand, concrete sand, gravel, crushed gravel, aggregates, construction aggregates, crushed gravel		
Product Use:	Aggregates used in the manufacture of products for construction applications (i.e. concrete products, asphalt, bricks, plaster)	Supplier/Manufacturer's Telephone Number:	
		780-420-2500	
		Supplier/Manufacturer's Emergency Telephone Number:	
		780-966-4340	

SECTION 2: INGREDIENTS/COMPOSITION

COMPONENT	PERCENT BY WEIGHT	CAS NUMBER	OSHA PEL	NIOSH REL (mg/m ³)	ACGIH TLV-TWA (mg/m ³)	LD ₅₀	LC ₅₀
Sand/Gravel	100	N/A	N/A	N/A	N/A	N/A	N/A
Crystalline Silica	~50-80	14808-60-7	10 mg/m ³ / (%SiO ₂ + 2) (R) 30 mg/m ³ / (%SiO ₂ + 2) (T)	0.05 (R)	0.025 (R)	N/A	N/A
Particulate, Not Otherwise Classified	N/A	N/A	5 mg/m ³ (R) 15 mg/m ³ (T)	N/A	3 (R) 10 (T)	N/A	N/A

NOTE:

This MSDS covers a variety of Lehigh Materials' sand and gravel. As such, exact individual composition of may vary between products.

NOTES:

- LD = Lethal dose.
- LC = Lethal concentration.
- N/A = Not applicable.
- (R) = Respirable fraction.
- (T) = Total fraction.
- CAS = Chemical Abstracts Service.
- ACGIH = American Conference of Governmental Industrial Hygienists.
- PEL = Permissible Exposure Limit.
- REL = Recommended Exposure Limit.
- TLV-TWA = Threshold Limit Value – Time Weighted Average.
- mg/m³ = milligrams per cubic metre.
- OSHA = Occupational Safety and Health Administration.
- NIOSH = National Institute for Occupational Safety and Health.


SECTION 3: PHYSICAL/CHEMICAL PROPERTIES

Physical State:	Solid	Evaporation Rate:	N/A
Appearance:	White or light grey/brown; heterogeneous mixture of multi-coloured particles ranging in size and shape	Boiling Point:	N/A
Odour/Odour Threshold:	None	Freezing Point:	None (solid)
Specific Gravity:	2.5 to 2.8	pH (in water):	Neutral
Vapour Pressure:	N/A	Viscosity:	None (solid)
Vapour Density:	N/A	Solubility in Water:	Insoluble

NOTES:

- N/A = Not applicable.

SECTION 4: HAZARD IDENTIFICATION

Note: Do not use this product for sand blasting. Sand and gravel dust is an inhalation hazard.		
Emergency Overview:	WHMIS Classification: <div style="text-align: center;">D2A</div> “Materials causing other toxic effects.”	
	HMS Classification: Health: 1 Flammability: 0 Reactivity: 0	1 = least 4 = high 2 = slight 5 = extreme 3 = moderate
	<ul style="list-style-type: none"> • Sand and gravel is not flammable, combustible or explosive. • Use of proper engineering controls, safe work procedures and personal protective equipment (PPE) is recommended. 	
Potential Health Effects:		
Primary Routes of Exposure:	<input checked="" type="checkbox"/> Inhalation <input type="checkbox"/> Ingestion <input type="checkbox"/> Absorption	
Eye Contact:	Direct contact may cause immediate or delayed irritation or inflammation due to mechanical abrasion. Administer immediate first aid to prevent further and/or significant damage to the eye(s).	
Skin Contact:	Direct contact may cause abrasions, discomfort and irritation due to mechanical abrasion.	
Skin Absorption:	Not expected to be a significant route of exposure.	
Ingestion:	Expected to be practically non-toxic. If ingested in large quantities, gastro-intestinal irritation and blockage may occur.	
Inhalation (acute):	Dust inhalation may cause respiratory tract (i.e. nose, throat, lung) irritation by mechanical abrasion. Other effects may include choking, coughing, sneezing and	

SECTION 4: HAZARD IDENTIFICATION

	shortness of breath.
Inhalation (chronic):	
Pneumoconiosis:	Chronic exposures to respirable dust levels may lead to pneumoconiosis, fibrosis and scarring of the lungs.
Silicosis:	Chronic exposure to respirable dust levels containing crystalline silica may cause silicosis, a progressive, disabling and possibly fatal lung disease. Silicosis may be: <ul style="list-style-type: none"> • <i>Acute</i> – resulting from very short-term (i.e. several months) exposure to very large amounts of respirable crystalline silica; marked by progressive shortness of breath, fever, weight loss and low blood oxygen levels. • <i>Chronic</i> – resulting from long-term exposure (i.e. 20 years) to low levels of respirable crystalline silica; marked by scarring and inflammation in the lungs and breathlessness. • <i>Accelerated</i> – resulting from short-term (i.e. 5 to 15 years) exposure to large amounts of respirable crystalline silica; marked by lung tissue inflammation and scarring. <p>Note: not all individuals will exhibit similar signs/symptoms of silicosis at similar times. Signs/symptoms of any form of silicosis may appear at any time, even after exposure has ceased.</p> <p>Note: smoking may aggravate the effects of silica exposure and is therefore not recommended.</p>
Autoimmune Disease:	Exposure to respirable crystalline silica has been associated with several autoimmune disorders, including scleroderma, systematic rheumatoid arthritis and erythematousus.
Tuberculosis:	Individuals with silicosis may be at a greater risk of developing tuberculosis, if exposed to persons with tuberculosis.
Renal Disease:	Exposure to respirable crystalline silica has been associated with increased incidences of chronic and end stage kidney disease.
Irritancy:	Inhaling respirable sand and gravel dust and/or respirable crystalline silica may aggravate existing respiratory diseases/dysfunctions (i.e. bronchitis, emphysema, COPD, pulmonary disease). Exposure to sand and gravel dust may irritate existing and/or eye conditions.
Sensitization:	N/A.
Carcinogenicity:	While “sand and gravel” is not listed as a known carcinogen by the IARC, ACGIH or NTP, these agencies have given <i>crystalline silica</i> this designation. Due to the unknown exact composition of sand and gravel (i.e. percent crystalline silica), precautions should be taken to reduce sand and gravel dust exposure to as low as reasonably achievable (ALARA).
Reproductive Toxicity, Teratogenicity and Mutagenicity:	There is no evidence that sand and gravel is a reproductive toxin, teratogen or mutagen.

NOTES:

- N/A = Not available.
- IARC = International Agency for Research on Cancer.
- NTP = National Toxicology Program.
- ACGIH = American Conference of Governmental Industrial Hygienists.

- WHMIS = Workplace Hazardous Materials Information System:
- HMIS = Hazardous Materials Identification System.

SECTION 5: FIRST AID MEASURES

Eye Contact:	<p><i>Do not attempt to remove particles from the eye.</i></p> <p>Immediately rinse contaminated eye(s) thoroughly with lukewarm water or saline solution for a minimum of 15 minutes, while holding the eyelids open. If particles remain embedded in the eye or irritation persists, seek further medical attention.</p>
Skin Contact:	<p>Wash with a mild soap and lukewarm water. Ensure clothing and affected skin areas are thoroughly decontaminated before eating, drinking, smoking and using toilet facilities. If rash develops or irritation persists, seek further medical attention.</p>
Ingestion:	<p><i>If person is unconscious do not give water or induce vomiting.</i></p> <p>If the person is conscious, gently wash mouth out and have individual drink plenty of water. Induce vomiting. Seek immediate medical attention or contact poison control centre immediately. The toll-free number is located below.</p>
<p>BC Poison Control Centre (24 hours): 1.800.567.8911</p>	
Inhalation:	<p>Move person to fresh air. Seek further medical attention if discomfort, coughing, irritation or other symptoms persist or develop later.</p>

SECTION 6: PREVENTATIVE MEASURES

Engineering Controls:	
Ventilation:	Use of general and local exhaust ventilation (LEV) (i.e. dust collectors) at source and handling points to maintain dust levels to as low as reasonably achievable is recommended.
Enclosures:	Both dust-generating processes and employee work stations may be enclosed to reduce exposures.
Dust suppression:	Wet methods (i.e. regularly spraying work areas) to reduce exposures are recommended.
Personal Protective Equipment (PPE):	
Eye Protection:	<p><i>Do not wear contact lenses without tight fitting goggles.</i></p> <p>ANSI, CSA or ASTM approved glasses with side shields should be worn as minimum protection. Tight-fitting goggles should be worn when excessive (i.e. visible) amounts of dust are present.</p>
Skin Protection:	<ul style="list-style-type: none"> • Gauntlet-style gloves should be worn where abrasions from sand and gravel may occur. • Safety footwear (i.e. CSA-approved steel toed boots). • Long-sleeved shirts and full length pants. Brush off clothing prior to removal and launder thoroughly before reuse. Tyvek suits may be worn if excessive amounts of dust are present.
<p><i>Do not use compressed air to remove dust from clothing.</i></p>	
Respiratory Protection:	When required (i.e. when potentially exposed to dust levels above the established occupational exposure limits), a properly-fitted NIOSH-approved respirator in good

SECTION 6: PREVENTATIVE MEASURES

	condition must be worn. Refer to the National Institute for Occupational Safety and Health Pocket Guide to Chemical Hazards for further respiratory protective equipment information.
<p>Note: If the workplace airborne levels of respirable crystalline silica are unknown, air monitoring is recommended to determine the appropriate level of respiratory protection.</p>	

SECTION 7: HANDLING, STORAGE, DISPOSAL & TRANSPORT

<p>Note: Respirable crystalline silica dust may be generated during storage, handling and disposal activities. Refer to Section 6 for information regarding exposure preventative measures.</p>	
Handling:	
<ul style="list-style-type: none"> Handle in a manner that minimizes dust generation. Bagged material may pose Musculoskeletal Disorder hazards; ensure proper posture and equipment use (i.e. scissor lifts, hand carts) when lifting and transporting materials. 	
Storage:	
Do not store near food, beverages or smoking materials.	
<ul style="list-style-type: none"> Stack bagged material in such a manner so as to prevent toppling. 	
Clean up and Disposal:	
Do not dry sweep or use compressed air to clean up sand and gravel. Use a HEPA vacuum or thoroughly wet area before removing debris.	
<ul style="list-style-type: none"> Pick up and reuse clean materials. Dispose of waste materials only in accordance with federal, provincial and local laws and regulations. 	
<p>ACCIDENTAL RELEASE MEASURES: Avoid dust generation and ventilate the area. Ensure clean up, and other personnel are not overexposed by using a HEPA vacuum, wet methods and PPE.</p>	
Shipping Information:	
<ul style="list-style-type: none"> This product is not classified as a Hazardous Material under US DOT or Canadian TDG Regulations. 	

NOTES:

- DOT = Department of Transportation.
- TDG = Transportation of Dangerous Goods.

SECTION 8: FIRE & EXPLOSION HAZARD DATA

Flash Point (°C):	N/A	Conditions of Flammability:	N/A
Upper Explosive Limit:	N/A	Hazardous Combustion Products:	N/A

SECTION 8: FIRE & EXPLOSION HAZARD DATA

Lower Explosive Limit:	N/A	Means of Extinction:	Sand and gravel are not flammable. Use extinguishing media appropriate for surrounding area.
Auto ignition Temperature:	N/A		
Explosion Data:			
Sensitivity to Chemical Impact:	N/A	Rate of Burning:	N/A
Sensitivity to Static Discharge:	N/A	Explosive Power:	N/A

NOTES:

- N/A = Not applicable.

SECTION 9: REACTIVITY DATA

Chemically Stable:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Incompatibility:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Contact with oxidizing agents such as the following may cause fire and/or explosions: <ul style="list-style-type: none"> • Fluorine • Boron trifluoride • Chlorine trifluoride • Manganese trifluoride • Oxygen trifluoride
Reactivity:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	When dissolved in hydrofluoric acid, silica may produce silicon tetrafluoride, a corrosive gas.
Hazardous Decomposition Products:	Spontaneous chemical decomposition will not occur, however respirable crystalline silica-containing dust particles may be mechanically generated by work, handling and clean up activities.
Hazardous Polymerization:	N/A

NOTES:

- N/A = Not applicable.

SECTION 10: PREPARATION INFORMATION

PREPARED BY:		PREPARED FOR:	
Name of Company:	PHH ARC Environmental Ltd.	Company:	Lehigh Materials
Address:	Suite 406 – 13251 Delf Place, Richmond, BC V6V 2A2	Address:	12640 Inland Way Edmonton, AB, T5V 1K2
Contact information:	1.877.322.4744	Contact information:	780-966-4340
Date of Preparation:	January 15, 2010	Date of Revision:	July 14, 2016

SECTION 11: OTHER INFORMATION

Lehigh Materials/PHH ARC believes the information contained within this Material Safety Data Sheet is accurate; however, Lehigh Materials/PHH ARC does not make any warranties or guarantees with respect to such accuracy and assumes no liability whatsoever regarding the use of the information contained herein. This information is not intended to be, and should not be considered, as legal advice or as ensuring compliance with any federal, state, provincial, local laws or regulations. Any party using this specific product should review all such laws, rules or regulations prior to use, including, but not limited to the United States of America, European Union, or Canada Federal, Provincial and State regulations.