MATERIAL SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Company Details: AMERICAN ALLIANCE CARD. INC.
BC0807844

Address: BOX 1780 RR 1
560 GREER RD
CLEARWATER
BC
CANADA V0E 1N0

Product Name: IGNEOUS / GRANITIC SILICA ROCK

Use: QUARRY PRODUCTS ARE USE IN GLASS, BEAUTY & PHARMACEIUTICAL PRODUCT, BUILDING CONSTRUCTION AND OTHER CIVIL ENGINEERING ACTIVITIES SUCH AS ROADS & BUILDINGS.

SECTION 2: NON-HAZARDS IDENTIFICATION NON-DANGEROUS GOODS

NON-HAZARDS SUBSTANCE NON-DANGEROUS GOODS

This product contains crystalline silica. Crystalline silica dust is classified as Hazardous
(Canada's National Occupational Health & Safety Resource for Classifying Hazardous substances

- The solid silica rock product as supplied is classified as non-Hazardous
- Dust in/on the supplied product or created when the product is cut, abraded, or crushed contains crystalline silica some of which may be respirable (particles small enough to go into the deep parts of the lung when breathed in)
- A proportion of the fine dust in/on the supplied product may be reparable crystalline silica.

The following Risk and Safety phrases apply to this product

Risk Phrases:

R20: Harmful by Inhalation (Applies to dust)
R22: Harmful if Swallowed
R48: Danger of serious damage to health by prolonged exposure through inhalation (Apply to dust)

Safety Phrases:

S22: Do not breathe dust

SECTION 3: HAZARD IDENTIFICATION

	WARNING	
	Toxic – Harmful by inhalation. (Contains crystalline silica) DO NOT use for Abrasive Blasting. Use proper engineering controls, work practices, and Personal Protective Equipment (PPE) to prevent exposure to dust. Read MSDS for details.	 Respiratory Protection  Eye Protection

Emergency Overview: Igneous or Granitic rocks are a mixture of angular particles, in a variety of colors and ranging in size from pebbles to boulder. They are odorless and they are not combustible or explosive. A single, short-term exposure to aggregate presents little or no hazard.

Potential Health Effects:

Eye Contact: Eye Contact to Airborne dust may cause immediate or delayed irritation or inflammation. Eye Exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Skin Contact: Aggregates may cause dry skin, abrasions, discomfort, and irritation.

Inhalation (acute): Breathing dust may cause nose, throat or lung irritation, including choking, depending on the degree of exposure.

Inhalation (chronic): Risk of injury depends on duration and level of exposure.

Silicosis: This product contains silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, a seriously disabling and fatal lung disease. See note to Physicians in Section 4 for further information.

This product contains mica. Prolonged and repeated inhalation of reparable mica dust may cause lung disease (pneumoconiosis). The extent and severity of lung injury depends on duration and level of exposure.

Carcinogenicity: Crystalline silica is classified by IARC and NTP as a known human carcinogen.

Autoimmune Disease: Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys.

Tuberculosis: Silicosis increases the risk of tuberculosis.

Renal Disease: Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica.

Ingestion: Do not ingest aggregates. Ingestion of small quantities of aggregates is not known to be harmful; ingesting large quantities can cause intestinal distress.

Medical Conditions Aggravated by Exposure: Individuals with lung disease (e.g. bronchitis, emphysema, COPD, pulmonary disease) can be aggravated by exposure.

SECTION 4: FIRST AID MEASURES

Eye Contact: Rinse eyes thoroughly with water for at least 15 minutes, including under lids, to remove all particles. Seek medical attention for abrasions.

Skin Contact: Wash with cool water and a pH neutral soap or a mild detergent. Seek medical attention for rash or irritation.

Inhalation: Move person to fresh air. Seek medical attention for discomfort or if coughing or other symptoms do not subside.

Ingestion: Do not induce vomiting. If conscious, have person drink plenty of water. Seek medical attention or contact poison control center immediately.

Note to Physician: The three types of silicosis include:

- 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).
- Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years). Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis.
- 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 level.

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.

SECTION 5: FIREFIGHTING MEASURES

Flashpoint & Method: Non-Combustible

General Hazard: Avoid breathing dust.

Extinguishing Media: Use extinguishing Media appropriate for Surrounding fire.

Firefighting Equipment: Aggregates pose no Fire-related hazard. A SCBA is recommended to limit exposure to combustion products when fighting any fire.

Combustion Products: None.

SECTION 6: ACCIDENTAL RELEASE MEASURES

General: Place spilled material into a container. Avoid actions that cause dust to become airborne. Avoid inhalation of dust. Wear appropriate protective equipment as described in Section 8. Do not wash aggregates down sewage and drainage systems or into bodies of water (e.g. streams).

Waste Disposal Method: Dispose of aggregates according to Federal, State, Provincial and Local regulations.

SECTION 7: HANDLING AND STORAGE

General: Engulfment hazard. To prevent burial or suffocation, do not enter a confined space, such as a silo, bin, bulk truck, or other storage container or vessel that stores or contains aggregates. Dust can buildup or adhere to the walls of a confined space. The dust can release, collapse or fall unexpectedly.

Do not stand on stockpiles of aggregate, they may be unstable. Use engineering controls (e.g. wetting stockpiles) to prevent windblown dust from stockpiles, which may cause the hazards described in Section 3.

Usage: Cutting, crushing or grinding aggregates, hardened cement, concrete or other crystalline silica-bearing materials will release respirable crystalline silica. Use all appropriate measures of dust control or suppression, and Personal Protective Equipment (PPE) described in Section 8 below.

Housekeeping: Avoid actions that cause dust to become airborne during clean-up such as dry sweeping or using compressed air. Use HEPA vacuum or thoroughly wet with water to clean-up dust. Use PPE described in Section 8 below.

Storage Temperature: Unlimited. **Storage Pressure:** Unlimited.

Clothing: Remove and launder clothing that is dusty before it is reused.

Warning: Crystalline silica exists in several forms, the most common of which is quartz. If crystalline silica (quartz) is heated to more than 870 C it can change to a form of crystalline silica known as tridymite, and if crystalline silica (quartz) is heated to more than 1470 C it can change to a form of crystalline silica known as cristobalite. Crystalline silica as tridymite and cristobalite are more fibrogenic than crystalline silica as quartz. The OSHA PEL for crystalline silica as tridymite and cristobalite is one-half the PEL for crystalline silica (quartz); the ACGIH TLV crystalline as tridymite and cristobalite is 0.05 mg/m (R).

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls: Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits.

Personal Protective Equipment (PPE):

Respiratory Protection: Under ordinary conditions no respiratory protection is required. Wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.

Eye Protection: Wear ANSI approved glasses or safety goggles when dust to prevent contact with eyes. Wearing contact lenses when using aggregates, under dusty conditions, is not recommended.

Skin Protection:	Wear gloves in situations where abrasions from aggregates may occur. Remove clothing and protective equipment that becomes dusty and launder before reusing.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid	**Evaporation Rate:**	NA.
Appearance:	White/Gray	**pH (in water):**	Neutral
Odor:	None.	**Boiling Point:**	NA
Vapor Pressure:	NA.	**Freezing Point:**	None, solid.
Vapor Density:	NA.	**Viscosity:**	None, solid.
Specific Gravity:	2.6-2.8	**Solubility in Water:**	Insoluble

Appearance	May range from fine white grains (sand) to large dark rock (aggregate/road base)
Odor	None
Ph	3.0-10.0
Vapour Pressure	Not determined
Vapour Density	Not determined
Boiling Point/range	Not determined
Freezing/melting point	Not determined
Solubility	Not soluble.
Specific gravity	2.2-2.7 (water=1)
Flash Point	Not applicable
Upper and lower flammability Limits	Not applicable
Ignition Temp	Not applicable
Particle Size	A proportion of the dusty may be respirable (below 10 microns) and if it becomes airborne constitutes an exposure if inhaled.

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability: Chemically Stable
Condition to avoid: Dust generation
Incompatible materials: None
Hazardous Decomposition: None
Products:
Hazardous Reactions: None

Crystalline silica is stable, compatible with other materials, does not polymerise, and will not decompose into hazardous by-products.

Note:

Aggregate dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Silicates react with powerful oxidizers such as fluorine, boron triflouride, chlorine triflouride, manganese triflouride, and oxygen diflouride.

SECTION 11: TOXICOLOGICAL INFORMATION

Health Effects

Acute (short term)-Swallowed

Unlikely under normal industrial use mildly abrasive to mouth and throat if swallowed

Eye Dust is irritating to the eyes. Exposure to dust may aggregate pre-existing eye conditions

Skin Dust may be mildly irritating and drying to the skin due to its physical characteristics

Inhaled Dust is mildly irritating to the nose, throat and respiratory tract and may cause coughing and sneezing. Pre-existing upper respiratory and lung diseases including asthma and bronchitis may be aggravated.

Chronic (long term)-

Eyes Dust may cause irritation and inflammation of the eyes and aggravate pre-existing eye conditions

Skin Repeated heavy contact with the dust may cause drying of the skin and can result in skin rash (dermatitis) typically affecting the hands. Over time this may become chronic and can also become infected

Inhaled Repeated exposure to the dust may result in increased nasal and respiratory secretions and coughing. Inflammation of lining tissue of the respiratory system may follow repeated exposure to high levels of dust with increased risk of bronchitis and pneumonia. Long term occupational over-exposure or prolonged breathing-in (or inhalation) of crystalline silica dust at levels above the NES carries the risk of causing serious and irreversible and serious disorders including scleroderma (a disease affecting the skin, joints, blood vessels and internal organs) and other auto-immune disorders. Inhalation of dust, including crystalline silica dust, is considered by medical authorities to increase the risk of lung disease due to tobacco smoking

The product contains a proportion of respirable free crystalline silica in the quartz component. Crystalline silica (inhaled in the form of quartz or cristobalite from occupational sources) has been classified by The International agency for Research on Cancer (IARC) as carcinogenic to humans (Group 1). However (in the view of CC&AA) the research on this is inconclusive and ASCC/NOHSC has not classified crystalline silica as a carcinogen

The most current research indicates no excess risk of lung cancer or other cancers from using these products

Other Information Inhalation of airborne particles from other sources in the work environment, including those from cigarette smoke, may increase the risk of respiratory diseases. It is recommended that all storage and work areas should be smoke-free zones and that other airborne contaminants should be kept to a minimum.

SECTION 12: ECOLOGICAL INFORMATION

Aggregates, Road Base, Sand and Fill

Ecotoxity Quarry Products pose no ecology risk. They are non-toxic to aquatic and terrestrial organisms and are not biodegradable

Persistence and Product is persistent and is non-degradable

Degradability Mobility	Low mobility would be expected in a landfill situation
Dust	Crystalline silica is non-toxic to aquatic and terrestrial organisms; is not biodegradable; is insoluble and is expected to have low mobility in landfill.

SECTION 13: DISPOSAL CONSIDERATIONS

- Crystalline silica itself in all common forms can be treated as a common waste for disposal or dumped into a landfill site in accordance with local authority guidelines.
- Measures should take to prevent dust generation during disposal and exposure and personal precautions should be observed (see above).
- Wear sufficient respiratory protection. Damped spilled material with water to avoid airborne dust, and then transfer material to a suitable container, for reuse.
- May be disposed in local landfill.

SECTION 14: TRANSPORT INFORMATION

This product is not classified as a Hazardous Material under U.S. DOT or Canadian TDG regulations.

SECTION 15: REGULATORY INFORMATION

OSHA/MSHA Hazard Communication:	This product is considered by OSHA/MSHA to be a hazardous chemical and should be included in the employer's hazard communication program.
CERCLA/SUPERFUND:	This product is not listed as a CERCLA hazardous substance.
EPCRA SARA Title III:	This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of the Superfund Amendment and reauthorization Act of 1986 and is considered a hazardous chemical and a delayed health hazard.
EPRCA SARA Section 313:	This product contains none of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and reauthorization Act of 1986 and 40 CFR Part 372.
RCRA:	If discarded in its purchased form, this product would not be a hazardous waste either by listing or characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.
TSCA:	Crystalline silica is exempt from reporting under the inventory update rule.
California Proposition 65:	Crystalline silica (airborne particulates of respirable size) is known by the State of California to cause cancer.
WHMIS/DSL:	Aggregate products may be subject to WHMIS depending on the intended use and worker exposure. Aggregate products containing crystalline silica are classified as D2A, and are subject to WHMIS requirements.

SECTION 16: OTHER INFORMATION

Abbreviations:

>	Greater than	NA	Not Applicable
ACGIH	American Conference of Governmental Industrial Hygienists	NFPA	National Fire Protection Association
CAS No	Chemical Abstract Service number	NIOSH	National Institute for Occupational Safety
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	NTP OSHA	National Toxicology Program Occupational Safety and Health Administration
CFR	Code for Federal Regulations	PEL	Permissible Exposure Limit
CL	Ceiling Limit	pH	Negative log of hydrogen ion
DOT	U.S. Department of Transportation	PPE	Personal Protective Equipment
EST	Eastern Standard Time	R	Respirable Particulate
HEPA	High-Efficiency Particulate Air	RCRA	Resource Conservation and Recovery Act
HMIS	Hazardous Materials Identification System	SARA	Superfund Amendments and Reauthorization Act
IARC	International Agency for Research on Cancer	T TDG	Total Particulate Transportation of Dangerous Goods
LC50	Lethal Concentration	TLV	Threshold Limit Value
LD50	Lethal Dose	TWA	Time Weighted Average (8 hour)
Mg/m3	Milligrams per cubic meter	WHMIS	Workplace Hazardous Materials
MSHA	Mine Safety and Health Administration		Information System

This MSDS was revised on January 21, 2013.

An electronic version of this MSDS will be available at www.aaffgllc.ccn under the Products and Services Section.

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