



MATERIAL SAFETY DATA SHEET

SECTION I - CHEMICAL PRODUCT AND COMPANY INFORMATION		
Product Name: GRANULIME	WHMIS – CLASSIFICATION: D2A: MATERIALS CAUSING OTHER TOXIC EFFECTS	
MANUFACTURER'S AND SUPPLIER'S NAME:		
GRAYMONT (WESTERN CANADA) INC. #260 – 4311, 12 th Street N.E., Calgary, Alberta, T2E 4P9		
EMERGENCY TEL. No.: (613) 996 – 6666 CANUTEC (Canada) (800) 424 – 9300 CHEMTREC (US)		
Chemical Name Calcium Carbonate Calcium/Sodium Lignosulfonate blend.	Chemical Family Alkaline earth	Chemical Formula Complex mixture - mostly CaCO₃. (Chemical formula of Lignosulfonate is unknown).
Molecular Weight CaCO₃ = 100.09	Trade Name and Synonyms Granulime, Limestone, Calcium Carbonate, Calcite.	Material Use Mineral filler, animal feed ingredient, Pesticide carrier.

SECTION II - COMPOSITION AND INFORMATION ON INGREDIENTS								
Hazardous Ingredients	Approximate Concentration	C.A.S. Number	Exposure limits (mg/m ³)					
			OSHA PEL	ACGIH TLV	RSST VEMP	MSHA PEL	NIOSH REL	NIOSH IDLH
(Complex Mixture)	(% by weight)		(TWA) 8/40h	(TWA) 8/40h	(TWA) 8/40h	(TWA) 8/40h	(TWA) 10/40h	
Limestone (Note3)	90 to 100	1317-65-3	15 (T) 5 (R)	TLV withdrawn	10 (T)	10 (T)	10 (T) 5 (R)	N/A
Calcium/Sodium Lignosulfonate (non-toxic and non- hazardous, for information only)	3 to 7	8061-51-6 8061-52-7	Not available	Not available	Not available	Not available	Not available	N/A
Crystalline Silica, Quartz	0 à 0.1 Or 0.1 à 1 (Note 1)	14808-60-7	30/(%SiO₂)+2 (T) 10/(%SiO₂)+2 (R)	0.025 (R)	0.1 (R)	30/(%SiO₂)+2 (T) 10/(%SiO₂)+2 (R)	0.05 (R)	50

(Note 1): Concentration of crystalline silica in a series of limestone products will vary from source to source. It was not detected on some samples (< 0.1% w/w). Therefore two ranges are being disclosed. (Note 2): ACGIH TLV Version 1973 has been adopted by the Mine Safety Health Administration (MSHA) as the regulatory Exposure Standard. (Note 3) The value is for particulate matter containing no asbestos and less than 1 % crystalline silica. (Note 4): ACGIH Documentation and adopted TLV for calcium carbonate were withdrawn in 2007 due to insufficient data. (Note 5): (T) Total Dust; (R): Respirable Dust.

SECTION III - PHYSICAL AND CHEMICAL DATA				
Physical State Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input checked="" type="checkbox"/>	Odor and Appearance Odorless – Dark brown to dark gray granular material.		Odor Threshold (p.p.m.) Not applicable	Specific Gravity 2.68 – 2.76
Vapor Pressure (mm) Not applicable	Vapor Density (Air = 1) Not applicable	Evaporation Rate Not applicable	Boiling Point (°C) Not applicable	Melting Point (°C) Not applicable
Solubility in Water (20°C) 0.00066g/100g	Volatiles (% by volume) Not applicable	pH (25 °C) 8.0 – 9.2	Bulk Density (kg/m ³) 800 - 965	Coefficient of water/oil distribution Not applicable

SECTION IV - FIRE AND EXPLOSION HAZARD DATA			
Flammability Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, under which conditions?			
Extinguishing Media Limestone does not burn. Use extinguishing media appropriate to surrounding fire conditions.			
Special Fire Fighting Procedures Limestone is generally non-flammable, but ignites on contact with fluorine. Wear adequate personal protection to prevent contact with material or its combustion products. Firefighters should use self-contained NIOSH approved breathing apparatus with full face piece to protect against the products of combustion.			
Flash point (°C) and Method Not applicable	Upper flammable limit (% by volume) Not applicable	Lower flammable limit (% by volume) Not applicable	
Auto Ignition Temperature (°C) Not applicable	TDG Flammability Classification Non-flammable	Hazardous Combustion Products None	
Dangerous Combustion Products None			
EXPLOSION DATA			
Sensitivity to Chemical Impact Not applicable	Rate of Burning Not applicable	Explosive Power Not applicable	Sensitivity to Static Discharge Not applicable

SECTION V - REACTIVITY DATA		
Chemical Stability Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	If no, under which conditions?	Limestone is a very stable chemical substance. Decomposes at 870 °C to form carbon dioxide and calcium oxide.
Incompatibility to other substances Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If so, which ones?	Fluorine, magnesium, aluminum, silicon, hydrogen, mercury, aluminum sulfate, ammonium salts, acids.
Reactivity Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If so, under which conditions?	Limestone is a very stable chemical substance. Decomposition does not occur at normal temperatures (inferior to 600°C). Reacts chemically with strong acids to form calcium based compounds and to liberate carbon dioxide.
Hazardous Decomposition Products	Decomposition at 870°C will produce calcium oxide and carbon dioxide.	
Hazardous Polymerization Products	Will not occur.	

SECTION VI - TOXICOLOGICAL PROPERTIES		
Route of Entry <input checked="" type="checkbox"/> Skin Contact <input type="checkbox"/> Skin Absorption <input checked="" type="checkbox"/> Eye Contact <input checked="" type="checkbox"/> Acute Inhalation <input type="checkbox"/> Chronic Inhalation <input checked="" type="checkbox"/> Ingestion		
Effects of Acute Exposure to Product:		
Skin	May cause dryness and irritation. Skin Irritation Data: Skin-Rabbit-500 mg/ 24 h – Moderate.	
Eyes	May cause eye irritation with discomfort or pain, local redness and swelling of the conjunctiva. Eye Irritation Data: Eye-Rabbit-750 µg/ 24 h – Severe.	
Inhalation	If inhaled in form of dust, may cause respiratory tract, irritation / inflammation. Exposure may cause coughing and sneezing. Large amounts may cause chemical pneumonitis.	
Ingestion	Cause gastro-intestinal irritation. If ingested in large quantities may cause nausea, constipation and hypercalcaemia, hemorrhage.	
Effects of Chronic Exposure to Product: No signs or symptoms of chronic exposure have been reported. This product may contain trace amounts of crystalline silica. Excessive inhalation of respirable crystalline silica dust may result in respiratory disease, including silicosis, pneumoconiosis and pulmonary fibrosis.		
LD ₅₀ of Product (Specify Species and Route) Calcium Carbonate: 6450 mg/kg (Rat, Oral). Calcium Lignosulfonate: 5000 mg/kg (Rat, Oral). Sodium Lignosulfonate: 40000 mg/kg (Rat, Oral). Sodium Lignosulfonate: 6030 mg/kg (Mouse, Oral).	Irritancy of Product Eyes	Exposure limits of Product Unavailable
LC ₅₀ of Product (Specify Species) Limestone : Unavailable Sodium Lignosulfonate : 7300 ppm/48 hr (Rainbow Trout)	Sensitization to Product None	Synergistic materials None reported

SECTION VI - TOXICOLOGICAL PROPERTIES (Cont'd)

Carcinogenicity Reproductive effects Tératogenicity Mutagenicity

Limestone is not listed as a carcinogen by ACGIH, MSHA, OSHA, NTP, DFG, RSST or IARC. It may, however, contain trace amounts of Crystalline Silica listed carcinogens by these organizations.

Crystalline Silica, which inhaled in the form of quartz or crystobalite from occupational sources, is classified by IARC as carcinogenic to humans. (Group 1)

Silica, crystalline (Airborne particles of respirable size) is regulated under California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Crystalline Silica is listed as a chemical known to the State to cause cancer.

NIOSH considers crystalline silica to be potential occupational carcinogen as defined by the OSHA carcinogen policy [29 CFR 1990]. (Ca).

NTP lists respirable Crystalline Silica as known to be human carcinogens based on sufficient evidence of carcinogenicity in humans. (K).

ACGIH lists respirable Crystalline Silica (quartz) as suspected human carcinogen. (A2).

DFG lists respirable Crystalline Silica as a substance that causes cancer in man (1)

RSST lists respirable Crystalline Silica (quartz) as suspected human carcinogen.

SECTION VII - PREVENTIVE MEASURES

Personal Protective Equipment (PPE)	Wear clean, dry gloves, full length pants over boots, long sleeved shirt buttoned at the neck, head protection and approved eye protection selected for the working conditions.
Gloves (Specify)	Gauntlets Cuff style.
Respiratory (Specify)	<p>NIOSH approved respirator.</p> <p><u>Up to 50 mg/m³</u>: (APF = 5) Any particulate respirator equipped with an N/R/P95, N/R/P99 or N/R/P100 filter and quarter-mask respirator.</p> <p><u>Up to 100 mg/m³</u>: (APF = 10) Any particulate respirator equipped with an N/R/P95, N/R/P99 or N/R/P100 filter and half-mask respirator.</p> <p><u>Up to 250 mg/m³</u>: (APF = 25). Any powered, air purifying respirator equipped with an N/R/P95, N/R/P99 or N/R/P100 filter or supplied-air respirator with elastomeric half-mask / facepiece.</p> <p>For <u>respirable quartz levels</u> that exceed or are likely to exceed an 8-hr TWA of <u>0.1 mg/m³</u>, a NIOSH approved (N/R/P95) dust respirator is recommended.</p> <p>For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of <u>0.5 mg/m³</u>, a NIOSH approved HEPA (N/R/P100) filter respirator is recommended.</p> <p>For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of <u>5.0 mg/m³</u>, a NIOSH approved positive pressure (SAR), full face respirator or equivalent is recommended.</p>
Eyes (Specify)	ANSI, CSA or ASTM approved safety glasses with side shields. Tight fitting dust goggles should be worn when excessive (visible) dust conditions are present. Do not wear contact lenses without tight fitting goggles when handling this chemical.
Footwear (Specify)	Usual protection
Clothing (Specify)	Fully covering skin.
Other (Specify)	Evaluate degree of exposure and use PPE if necessary.

SECTION VII - PREVENTIVE MEASURES (Cont'd)

Engineering Controls (e.g. ventilation, enclosed process, specify)

Enclose dust sources; use exhaust ventilation (dust collector) or other engineering controls at handling points to keep airborne levels below recommended exposure limits.

Leak and Spill Procedure

Limit access to trained personnel. Sweep up and place in container. Use industrial vacuums for large spills. Avoid raising dust. Ventilate area.

Waste Disposal

Transport to disposal area or bury. Review Federal, Provincial and local Environmental regulations.

Handling Procedures and Equipment

Avoid skin and eye contact. Minimize dust generation. Wear protective goggles and in cases of insufficient ventilation, use NIOSH approved anti-dust mask. An eye wash station should be readily available where this product is used.

Storage Requirements

Keep tightly closed containers in a cool, dry and well ventilated area, away from acids.

Special Shipment Information

Limestone is neither regulated by the Transportation of Dangerous Goods (TDG) Regulations (Canada) nor by the Hazardous Materials Regulations (USA).

SECTION VIII - FIRST AID MEASURES

Skin

Carefully and gently brush the contaminated body surfaces in order to remove all traces of GRANULIME. Use a brush, cloth or gloves. Remove all GRANULIME-contaminated clothing. Rinse contaminated area with lukewarm water. If irritation occurs or persists seek medical attention.

Eyes

Immediately rinse contaminated eye(s) with gently running lukewarm water (saline solution is preferred) for 15 to 20 minutes. In the case of an embedded particle in the eye, or if irritation occurs or persists, consult a physician.

Inhalation

Move source of dust or move victim to fresh air. Obtain medical attention immediately. If victim does not breathe, give artificial respiration. Contact a physician immediately.

Ingestion

If victim is conscious, wash out mouth with water. Have conscious person drink several glasses of water to dilute. Induce vomiting. Contact a physician immediately. Never give anything by mouth to an unconscious or convulsing person.

General Advise

Consult a physician for all exposures except minor instances of inhalation.

SECTION IX - REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 (**SARA Title III**). / The Emergency Planning and “Community Right-to-Know” Act (**EPCRA**). / Comprehensive Environmental Response, Compensation and Liability Act (**CERCLA**). / Resource Conservation and Recovery Act (**RCRA**).

Component Limestone has been reviewed against the following regulatory listings:

- **SARA Section 302 – Emergency Planning Notification. Extremely Hazardous Substances (EHS) List and Threshold Planning Quantity (TPQ). (40 CFR, Part 355, Section 30): Not listed.**
- **SARA Section 304 – Emergency Release Notification. Extremely Hazardous Substances (EHS) and Reportable Quantity (RQ) List. (40 CFR, Part 355, Section 40): Not listed.**
- **SARA Section 311/312 – Hazard Categories (40 CFR, Part 370): This product is not listed under CFR 1910.1200 (OSHA Hazard Communication).**
- **SARA Section 313 – Toxics Release Inventory (TRI). Toxic Chemical List (40 CFR, Part 372): Not listed.**
- **CERCLA – Hazardous Substance (40 CFR, Part 302): Not listed in Table 302.4.**
- **RCRA – Hazardous Waste Number (40 CFR, Part 261, Subpart D): Not listed.**
- **RCRA – Hazardous Waste Classification (40 CFR, Part 261, Subpart C): Not classified.**

CWA 311. - Clean Water Act List of Hazardous Substances.

Limestone and Calcium/Sodium Lignosulfonate do not appear on the Clean Water Act (CWA) list of hazardous substances.

California Proposition 65.

Component Limestone does not appear on the above regulatory listing. This product may contain small amounts of crystalline silica. Silica, crystalline (Airborne particles of respirable size) is regulated under California’s Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Crystalline Silica is listed as a chemical known to the State to cause cancer.

Transportation - Hazardous Materials Regulations (USA) & Transportation of Dangerous Goods (TDG) Regulations (Can).

Limestone and Calcium/Sodium Lignosulfonate do not appear on the above regulatory listings.

Toxic Substances Control Act (TSCA).

All naturally occurring components of this product are automatically included in the USEPA TSCA Inventory List per 40 CFR 710.4 (b). All other components are on the USEPA TSCA Inventory List. Limestone is exempt from reporting under the inventory update rule. Calcium and Sodium Lignosulfonate are subject to inventory update reporting (IUR).

Canadian Environmental Protection Act (CEPA) – Substances Lists (DSL/NDSL).

Limestone is specified on the Non-Domestic Substances List (NDSL). Calcium Carbonate, Calcium and Sodium Lignosulfonate are specified on the public Portion of the Domestic Substances List (DSL).

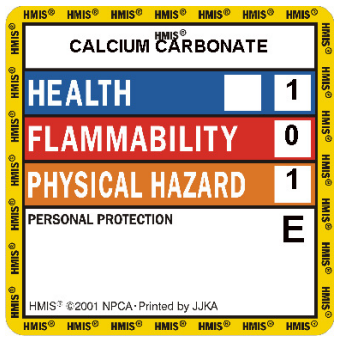
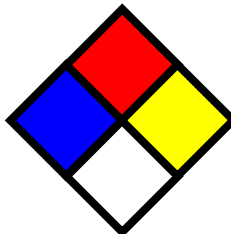
ANSI/NSF 60 – Drinking Water Treatment Additives.

Not applicable

FDA – U.S. Food and Drug Administration, Department of Health and Human Services.


Limestone has been determined as “Generally Recognized As Safe” (GRAS) by FDA. See 21CFR184.1409. (CFR Title 21 Part 184 - - Direct food substances affirmed as generally recognized as safe). Calcium lignosulfonate may be safely used in or on food, subject to the provisions of section CFR Title 21 Part 172.715.

SECTION X – OTHER INFORMATION

<p>Hazardous Materials Identification System (U.S.)</p>		<p>National Fire Protection Association (U.S.) NFPA 704</p> <p>Health Hazard</p> <p>NFPA has not assigned a rating to Limestone.</p>	<p>Fire Hazard</p>  <p>Instability / Thermal Hazard</p> <p>Specific hazard</p>
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WHMIS Classification:
“D2A” Materials causing other toxic effects.

Symbol:



Additional Information/Comments:
The technical data contained herein is given as information only and is believed to be reliable.
GRAYMONT makes no guarantee of results and assumes no obligation or liability in connection therewith.

Sources Used:
 NFPA, NLA, TDG, CSST, RSST, (LSRO-FASEB), Hazardous Products Act, Environment Canada, Enviroguide, OSHA, ACGIH, IARC, NIOSH, CFR, NTP, HSDB, EPA SRS, RTECS, DFG, Chemistry and Technology of Lime and Limestone (John Wiley and Sons, Inc.), Lime and Limestone (WILEY-VCH).

SECTION XI - PREPARATION INFORMATION

Prepared by:	Telephone number:	Date :
GRAYMONT (QC) INC. Quality Assurance & Technical Services	(450) 449-2262	June 2011

An electronic version of this MSDS is available at: www.graymont.com under the PRODUCTS section.