GRAYMONT

MATERIAL SAFETY DATA SHEET

SECTION I - CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: **DOLOMITIC HYDRATED LIME**	**WHMIS – CLASSIFICATION: D2A: MATERIALS CAUSING OTHER TOXIC EFFECTS E: CORROSIVE MATERIAL**

MANUFACTURER'S AND SUPPLIER'S NAME:

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Chemical Name	Chemical Family	Chemical Formula
Calcium Magnesium Hydroxide Oxide and Calcium Magnesium Hydroxide	**Alkaline earth hydroxide**	**Complex mixture – mostly $CaMg(OH)_4$ and $Ca(OH)_2MgO$**
Molecular Weight	Trade Name and Synonyms	Material Use
$CaMg(OH)_4$ = 132.41 $Ca(OH)_2MgO$ = 114.40	**Hydrated dolomitic lime ($Ca(OH)_2MgO$), Double hydrated dolomitic lime ($CaMg(OH)_4$)**	**Neutralization, Flocculation, Stabilization, Polishing, Masonry Mortar, Plaster, Stucco, Fresco Paints and Lime wash.**

PRODUCT NAME	**FORMULA**	**CAS#**
BONDCRETE® Mason's Lime	**$CaMg(OH)_4$**	**39445-23-3**
Graymont Dolomitic Hydrated Agricultural Lime	**$Ca(OH)_2MgO$**	**58398-71-3**
Graymont Dolomitic Hydrated Lime	**$Ca(OH)_2MgO$**	**58398-71-3**
Graymont Dolomitic Spray Lime	**$CaMg(OH)_4$**	**39445-23-3**
GRAND PRIZE® Finish Lime	**$Ca(OH)_2MgO$**	**58398-71-3**
HI-MAG-CHEM® Hydrate	**$Ca(OH)_2MgO$**	**58398-71-3**
IVORY® Autoclaved Finish Lime	**$CaMg(OH)_4$**	**39445-23-3**
KEMIDOL® Hydrate	**$Ca(OH)_2MgO$**	**58398-71-3**
KEMIDOL® Superhydrate	**$CaMg(OH)_4$**	**39445-23-3**
LIMOID® Type "N" Hydrate	**$Ca(OH)_2MgO$**	**58398-71-3**
LIMOID® Type "S" Hydrate	**$CaMg(OH)_4$**	**39445-23-3**
MORTASEAL® Autoclaved Mason's Lime	**$CaMg(OH)_4$**	**39445-23-3**
SNOWDRIFT® Autoclaved Finish Lime	**$CaMg(OH)_4$**	**39445-23-3**
SUPER LIMOID® Agricultural Hydrated Lime	**$Ca(OH)_2MgO$**	**58398-71-3**
SUPER LIMOID® Mason's Hydrated Lime Type "S"	**$CaMg(OH)_4$**	**39445-23-3**
SUPER LIMOID® Mason's Hydrated Lime Type "SA"	**$CaMg(OH)_4$**	**39445-23-3**
WESTERN LIMATE – Industrial Grade of Dolomitic Hydrated Lime	**$CaMg(OH)_4$**	**39445-23-3**
WESTERN MIRACLE LIME – Type S Dolomitic Hydrated Masonry Lime	**$CaMg(OH)_4$**	**39445-23-3**
WESTERN Air Entrained Lime – Type SA Dolomitic Hydrated Masonry Lime	**$CaMg(OH)_4$**	**39445-23-3**
WESTERN FINISH LIME – Type S Dolomitic Hydrated Masonry Lime	**$CaMg(OH)_4$**	**39445-23-3**

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**	
Calcium Magnesium Hydroxide	**60 to 100**	**39445-23-3**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Calcium Magnesium Hydroxide Oxide	**60 to 100**	**58398-71-3**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Calcium hydroxide	**30 to 60**	**1305-62-0**	**15 (tot dust)** **5 resp dust**	**5**	**5**	**5**	**N/A**	**N/A**
Magnesium Hydroxide	**0 to 40**	**1309-42-8**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Magnesium Oxide	**0 to 40**	**1309-48-4**	**10**	**10**	**10**	**10**	**N/A**	**N/A**
Crystalline Silica, Quartz	**0 à 0.1 Or 0.1 à 1** (**Note 1**)	**14808-60-7**	**30/(%SiO_2)+2 (T) 10/(%SiO_2)+2 (R)**	**0.025 (R)**	**0.1 (R)**	**30/(%SiO_2)+2 (T) 10/(%SiO_2)+2 (R)**	**0.05 (R)**	**50**

(**Note 1**): Concentration of crystalline silica in a series of lime 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**): (**T**) Total Dust; (**R**): Respirable Dust.

SECTION III - PHYSICAL AND CHEMICAL DATA

Physical State	Odor and Appearance		Odor Threshold (p.p.m.)	Specific Gravity
Gas ☐ Liquid ☐ Solid ☑	**Slight earthy odor – Fine white powder**		**Not applicable**	**2.2 - 2.6**
Vapor Pressure (mm)	Vapor Density (Air = 1)	Evaporation Rate	Boiling Point (°C)	Melting Point (°C)
Not applicable	**Not applicable**	**Not applicable**	**Decomposes at 345**	**Not applicable**
Solubility in Water (20°C)	Volatiles (% by volume)	pH (25 °C)	Bulk Density (kg/m^3)	Coefficient of water/oil distribution
0.1g/100g Solution	**Not applicable**	**Sat. solution $Ca(OH)_2$ 12.45**	**400 - 650**	**Not applicable**

SECTION IV - FIRE OR EXPLOSION HAZARD DATA

Flammability

Yes ☐ No ☑ If yes, under which conditions?

Extinguishing Media

Dolomitic Hydrated Lime does not burn. Use extinguisher appropriate for material burning.

Special Fire Fighting Procedures

Not applicable

Flash point (°C) and Method	Upper flammable limit (% by volume)	Lower flammable limit (% by volume)
Not applicable	**Not applicable**	**Not applicable**
Auto Ignition Temperature (°C)	TDG Flammability Classification	Hazardous Combustion Products
Not applicable	**Non-flammable**	**None**

Dangerous Combustion Products **None**

EXPLOSION DATA

Sensitivity to Chemical Impact	Rate of Burning	Explosive Power	Sensitivity to Static Discharge
Not applicable	**Not applicable**	**Not applicable**	**Not applicable**

SECTION V - REACTIVITY DATA

Chemical Stability
Yes ☑ No ☐ If no, under which conditions? **Absorbs carbon dioxide in the air to form calcium magnesium carbonate.**

Incompatibility to other substances
Yes ☑ No ☐ If so, which ones? **Boron tri-fluoride, chlorine tri-fluoride, ethanol, fluorine, hydrogen fluoride, phosphorus pentoxide; water and acids (violent reaction with generating heat and possible explosion in confined area).**

Reactivity
Yes ☑ No ☐ If so, under which conditions? **Reacts violently with Maleic Anhydride, strong acids. Reacts chemically with acids and many other compounds and chemical elements to form calcium and magnesium based compounds. Explosive when mixed with nitro organic compounds.**

Hazardous Decomposition Products **Calcium Hydroxide decomposes at 540°C and Magnesium Hydroxide decomposes at 345°C to produce calcium oxide, magnesium oxide and water.**

Hazardous Polymerization Products **Will not occur.**

SECTION VI - TOXICOLOGICAL PROPERTIES

Route of Entry

☑ Skin Contact ☐ Skin Absorption ☑ Eye Contact ☑ Acute Inhalation ☐ Chronic Inhalation ☑ Ingestion

Effects of Acute Exposure to Product

Skin	**Severe irritation of mucous and skin, removes natural skin oils.**
Eyes	**Severe eye irritation, intense watering of the eyes, possible lesions, and possible blindness when exposed for prolonged period. Eye Irritation Data: Eye-Rabbit-10mg/ 24 h – Severe.**
Inhalation	**If inhaled in form of dust, irritation of breathing passages, cough, sneezing.**
Ingestion	**If ingested: pain, vomiting blood, diarrhea, collapse, drop in blood pressure (indicates perforation of esophagus or stomach).**

Effects of Chronic Exposure to Product:

Contact dermatitis. Following repeated or prolonged contact, this product can cause redness, desquamation and fissures. 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)	Irritancy of Product	Exposure limits of Product
Unavailable	**Severe to moist tissues**	**Unavailable**
LC_{50} of Product (Specify Species)	Sensitization to Product	Synergistic materials
Unavailable	**None**	**None reported**

☑ Carcinogenicity ☐ Reproductive effects ☐ Tératogenicity ☐ Mutagenicity

Dolomitic Hydrated Lime 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)	**Respirator Recommendations for Dolomitic Hydrated Lime: Not available.** **Respirator Recommendations for Calcium Oxide: NIOSH approved respirator.** **Up to 10 mg/m^3: (APF = 5) Any quarter-mask respirator.** **Up to 20 mg/m^3: (APF = 10) Any particulate respirator equipped with an N95, R95 or P95 filter except quarter-mask respirator. Any supplied-air respirator.** **Up to 25 mg/m^3: (APF = 25) Any supplied-air respirator operated in a continuous-flow mode. Any powered, air purifying respirator with a high-efficiency particulate filter.**
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)	**Resistant to caustics.**
Clothing (Specify)	**Fully covering skin. Remove when wet or contaminated. Change daily.**
Other (Specify)	**Evaluate degree of exposure and use PPE if necessary. After handling lime, employees must shower. If exposed daily, use oil, Vaseline, silicone base crème etc. to protect exposed skin, particularly neck, face and wrists.**

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

Enclose dust sources; use exhaust ventilation (dust collector) at handling points, keep levels below Max. Concentration Permitted.

Leak and Spill Procedure

Limit access to trained personnel. Use industrial vacuums for large spills. 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 dust respirator. An eye wash station and safety shower should be readily available where this material or its water dispersions are used. Contact lenses should not be worn when working with this chemical.

Storage Requirements

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

Special Shipment Information

Dolomitic Hydrated Lime is not regulated by the Transportation of Dangerous Goods (TDG) Regulations (Canada) nor 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 lime. Use a brush, cloth or gloves. Remove all lime-contaminated clothing. Rinse contaminated area with lukewarm water for 15 to 20 minutes. Consult a physician if exposed area is large or if irritation persists.

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 chemical burn, as assessed by first aid trained personnel, contact 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.

Ingestion

If victim is conscious, give 300 ml (10 oz) of water, followed by diluted vinegar (1 part vinegar, 2 parts water) or fruit juice to neutralize the alkali. Do not induce vomiting. Contact a physician immediately.

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 Dolomitic Hydrated Lime 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 regulated under CFR 1910.1200 (OSHA Hazard Communication) as Immediate (Acute) Health Hazards – Irritant.**
- **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.

Dolomitic Hydrated Lime does not appear on the Clean Water Act (CWA) list of hazardous substances.

California Proposition 65.

Component Calcium Magnesium Hydroxide 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).

Dolomitic Hydrated Lime does 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 listed on the USEPA TSCA Chemical Substances Inventory. Dolomitic Hydrated Lime is subject to inventory update reporting (IUR).

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

Dolomitic Hydrated Lime (Calcium Magnesium Hydroxide & Calcium Magnesium Hydroxide Oxide) is specified on the Non-Domestic Substances List (NDSL).

ANSI/NSF 60 - Drinking Water Treatment Additives.

Not applicable

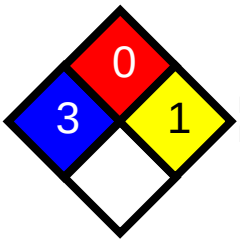
FDA - U.S. Food and Drug Administration, Department of Health and Human Services.

Not applicable

SECTION X - OTHER INFORMATION

Hazardous Materials Identification System (U.S.)

National Fire Protection Association (U.S.) NFPA 704



WHMIS – Classification:

"E" Corrosive Materials.

Symbol:

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 **Quality Assurance & Technical Services**	**(450) 449-2262**	**March 2015**

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