**SECTION I - CHEMICAL PRODUCT AND COMPANY INFORMATION**

**Product Name:** HIGH CALCIUM QUICKLIME  
**WHMIS – CLASSIFICATION:**  
D2A: MATERIALS CAUSING OTHER TOXIC EFFECTS  
E: CORROSIVE MATERIAL

**MANUFACTURER’S AND SUPPLIER’S NAME:**
- **GRAYMONT (NB) INC**  
  4634, Route 880, Havelock, New Brunswick, E4Z 5K8.
- **GRAYMONT (PA) INC.**  
  194, Match Factory Place, Bellefonte, Pennsylvania, 16823
- **GRAYMONT (QC) INC.**  
- **GRAYMONT (WESTERN CANADA) INC.**  
  #260 – 4311, 12th Street N.E., Calgary, Alberta, T2E 4P9
- **GRAYMONT WESTERN LIME INC.**  
  206 N. 6th Avenue, West Bend, Wisconsin, 53095
- **GRAYMONT (WESTERN US) INC.**  
  3950 South, 700 East, Suite 301, Salt Lake City, Utah, 84107
- **GRAYMONT (WI) INC.**  
  Foot of Hill Avenue, Superior, Wisconsin, 54880

**EMERGENCY TEL. No.:** (613) 996 – 6666 CANUTEC (Canada)  
(800) 424 – 9300 CHEMTREC (US)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Chemical Family</th>
<th>Chemical Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium oxide</td>
<td>Alkaline earth oxide</td>
<td>Complex mixture - mostly CaO</td>
</tr>
</tbody>
</table>

**Molecular Weight**

| CaO = 56.08 |

<table>
<thead>
<tr>
<th>Trade Name and Synonyms</th>
<th>Material Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Calcium Quicklime, Lime, Quicklime, Calcium Oxide, Burnt Lime, Unslaked Lime, Fluxing Lime.</td>
<td>Neutralization, Flocculation, Flux (met.), Caustic agent, absorption</td>
</tr>
</tbody>
</table>

**SECTION II - COMPOSITION AND INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>Hazardous Ingredients</th>
<th>Approximate Concentration</th>
<th>C.A.S. Number</th>
<th>Exposure limits (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Complex Mixture) (% by weight)</td>
<td>(TWA) 8/40h</td>
<td>(TWA) 8/40h</td>
<td>(TWA) 8/40h</td>
</tr>
<tr>
<td>Calcium Oxide</td>
<td>90 to 100</td>
<td>1305-78-8</td>
<td>5</td>
</tr>
<tr>
<td>Crystalline Silica, Quartz</td>
<td>0 à 0.1</td>
<td>0.1 à 1</td>
<td>14808-60-7</td>
</tr>
</tbody>
</table>

(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

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Odor and Appearance</th>
<th>Odor Threshold (p.p.m.)</th>
<th>Specific Gravity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas □ Liquid □ Solid ☑</td>
<td>Slight earthy odor - White crystalline substance</td>
<td>Not applicable</td>
<td>3.25 - 3.38</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vapor Pressure (mm)</th>
<th>Vapor Density (Air = 1)</th>
<th>Evaporation Rate</th>
<th>Boiling Point (°C)</th>
<th>Melting Point (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>2850</td>
<td>2570 - 2625</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solubility in Water (20°C)</th>
<th>Volatiles (% by volume)</th>
<th>pH (25 °C)</th>
<th>Bulk Density (kg/m³)</th>
<th>Coefficient of water/oil distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.125g/100g Solution</td>
<td>Not applicable</td>
<td>Sat. soln CaO 12.45</td>
<td>720 - 1200</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### SECTION IV - FIRE OR EXPLOSION HAZARD DATA

**Flammability**

Yes □ No ☑ If yes, under which conditions?

**Extinguishing Media**

Quicklime does not burn. Use extinguisher appropriate for material burning.

**Special Fire Fighting Procedures**

Avoid using water unless necessary for other materials, in which case, flood to absorb heat generated. (Contact with water will evolve heat and could cause ignition of paper, cardboard, etc.). Wear self-contained breathing equipment approved by NIOSH.

<table>
<thead>
<tr>
<th>Flash point (°C) and Method</th>
<th>Upper flammable limit (% by volume)</th>
<th>Lower flammable limit (% by volume)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Auto Ignition Temperature (°C)</th>
<th>TDG Flammability Classification</th>
<th>Hazardous Combustion Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td>Non-flammable</td>
<td>None</td>
</tr>
</tbody>
</table>

Dangerous Combustion Products

None

**EXPLOSION DATA**

<table>
<thead>
<tr>
<th>Sensitivity to Chemical Impact</th>
<th>Rate of Burning</th>
<th>Explosive Power</th>
<th>Sensitivity to Static Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
SECTION V - REACTIVITY DATA

Chemical Stability
Yes ☑ No ☐ If no, under which conditions?
Absorbs moisture and carbon dioxide in the air to form calcium hydroxide and calcium 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 strong acids. Reacts with water to form calcium hydroxide. The heat generated when mixed with water or moist air is sufficient enough to ignite surrounding materials such as paper, wood or cloth.

Hazardous Decomposition Products
None.

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 or burning of mucous and skin. Dehydration of tissues.

Eyes
Severe eye irritation and burning, intense watering of the eyes, possible lesions, possible blindness when exposed for prolonged period. (Draize >80).

Inhalation
If inhaled in form of dust: nose, oral cavity and throat irritation, cough, sneezing, inflammation of breathing passages, ulceration and perforation of nasal septum, bronchitis, possible pneumonia.

Ingestion
If ingested, burning and edema of digestive tracts, abundant salivation, difficulties in swallowing and breathing, vomiting blood, 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.

LD50 of Product (Specify Species and Route) Irritancy of Product Exposure limits of Product
3059 mg/kg (Mouse/Intraperitoneal) Severe to moist tissues Unavailable

LC50 of Product (Specify Species) Sensitization to Product Synergistic materials
Unavailable None None reported
### SECTION VI - TOXICOLOGICAL PROPERTIES (Cont’d)

<table>
<thead>
<tr>
<th>Carcinogenicity</th>
<th>Reproductive effects</th>
<th>Tératogenicity</th>
<th>Mutagenicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>✗</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Quicklime 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

<table>
<thead>
<tr>
<th>Personal Protective Equipment (PPE)</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloves (Specify)</td>
<td>Gauntlets Cuff style.</td>
</tr>
<tr>
<td>Respiratory (Specify)</td>
<td>NIOSH approved respirator.</td>
</tr>
<tr>
<td></td>
<td><strong>Up to 10 mg/m³</strong>: (APF = 5) Any quarter-mask respirator.</td>
</tr>
<tr>
<td></td>
<td><strong>Up to 20 mg/m³</strong>: (APF = 10) Any particulate respirator equipped with an N95, R95 or P95 filter except quarter-mask respirator. Any supplied-air respirator.</td>
</tr>
<tr>
<td></td>
<td><strong>Up to 25 mg/m³</strong>: (APF = 25) Any supplied-air respirator operated in a continuous-flow mode. Any powered, air purifying respirator with a high-efficiency particulate filter.</td>
</tr>
<tr>
<td></td>
<td>For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of 0.1 mg/m³, a NIOSH approved (N/R/P95) dust respirator is recommended.</td>
</tr>
<tr>
<td></td>
<td>For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of 0.5 mg/m³, a NIOSH approved HEPA (N/R/P100) filter respirator is recommended.</td>
</tr>
<tr>
<td></td>
<td>For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of 5.0 mg/m³, a NIOSH approved positive pressure (SAR), full face respirator or equivalent is recommended.</td>
</tr>
<tr>
<td>Eyes (Specify)</td>
<td>ANSI, CSA or ASTM approved safety glasses with side shields. Tight fitting dustoggles should be worn when excessive (visible) dust conditions are present. Do not wear contact lenses without tight fitting goggles when handling this chemical.</td>
</tr>
<tr>
<td>Footwear (Specify)</td>
<td>Resistant to caustics.</td>
</tr>
<tr>
<td>Clothing (Specify)</td>
<td>Fully covering skin. Remove when wet or contaminated. Change daily.</td>
</tr>
<tr>
<td>Other (Specify)</td>
<td>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.</td>
</tr>
</tbody>
</table>
### SECTION VII - PREVENTIVE MEASURES (Cont’d)

**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**

Quicklime is neither regulated by the Transportation of Dangerous Goods (TDG) Regulations (Canada) nor by the Hazardous Materials Regulations (USA) unless this material is offered or intended for transportation by aircraft.

### 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


Component Calcium Oxide has been reviewed against the following regulatory listings:

- **CERCLA** – Hazardous Substance (40 CFR, Part 302): Not listed in Table 302.4.


Calcium Oxide has been withdrawn from the Clean Water Act (CWA) list of hazardous substances. (11/13/79) (44FR65400)

California Proposition 65.

Component Calcium Oxide 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).

Calcium Oxide is listed in both table 172.101 of Title 49 CFR 172 and in schedule 18 D.G. List (Chapter 34 TDG ACT, SOR/DORS 93-525). Application of requirements is restricted to material offered or intended for transportation by aircraft. - Calcium oxide. By aircraft only. Class 8 - Corrosives. PIN UN1910. Packing group III. Maximum net quantity per package - passenger vehicles, 25kg.

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. Calcium Oxide is subject to inventory update reporting (IUR).

Canadian Environmental Protection Act 1999 (CEPA) – Substances Lists (DSL/NDSL).

Calcium Oxide is specified on the public Portion of the Domestic Substances List (DSL).

ANSI/NSF 60 - Drinking Water Treatment Additives.

Quicklime has been investigated with respect to elements identified by EPA as toxic and it has been classified for use in direct contact with drinking water. (In accordance with Standard ANSI/NSF 60). For a list of classified products, refer to Underwriters Laboratories Inc.'s Online Certifications Directory.

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

Calcium Oxide has been determined as “Generally Recognized As Safe” (GRAS) by FDA. See 21CFR184.1210. (CFR Title 21 Part 184 - - Direct food substances affirmed as generally recognized as safe).
SECTION X - OTHER INFORMATION

Hazardous Materials Identification System (U.S.)

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

Health Hazard

Fire Hazard

Instability / Thermal Hazard

Specific hazard

WHMIS – Classification:
“E” Corrosive Material.

“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:

SECTION XI - PREPARATION INFORMATION

Prepared by: GRAYMONT (QC) INC.
Quality Assurance & Technical Services

Telephone number: (450) 449-2262
Date: May 2012

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