

## MATERIAL SAFETY DATA SHEET

### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name:</b>	Lehigh Inland Type 'N' Masonry Cement, A Portland Cement - Limestone Blend
<b>CAS #:</b>	Not Applicable.
<b>Product Use:</b>	Preparation of masonry mortar and stucco.
<b>MSDS Information:</b>	This MSDS was produced in November 2002 and replaces any previous versions.
<b>Product Code:</b>	Not Applicable.
<b>Chemical Family:</b>	Calcium compounds. Calcium silicate compounds, calcium carbonate and other calcium compounds containing iron and aluminum make up the majority of this product.
<b>Chemical Name And Synonyms:</b>	Type N masonry cement.
<b>Formula:</b>	This product consists of finely ground portland cement clinker, limestone and gypsum.
<b>Supplier/Manufacturer:</b>	Lehigh Inland Cement Limited P.O. Box 3961 12640 – 156 Street Edmonton, Alberta, Canada T5L 4P8 Telephone (780) 420 2500
<b>Emergency Contact Information:</b>	Lehigh Inland Cement Limited P.O. Box 3961 12640 – 156 Street Edmonton, Alberta, Canada T5L 4P8 Telephone (780) 420 2541

### SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS#	% By Weight	ACGIH TLV-TWA	OSHA PEL-TWA
Calcium Carbonate	471-34-1	30-50%	10 mg total dust/m <sup>3</sup>	15 mg total dust/m <sup>3</sup> 5 mg respirable dust/m <sup>3</sup>
Magnesium Carbonate	546-93-0	3-5%	10 mg total dust/m <sup>3</sup>	15 mg total dust/m <sup>3</sup> 5 mg respirable dust/m <sup>3</sup>
Calcium Silicates	various	30-60%	10 mg total dust/m <sup>3</sup>	15 mg total dust/m <sup>3</sup> 5 mg respirable dust/m <sup>3</sup>
Gypsum	7778-18-9	1-5%	10 mg total dust/m <sup>3</sup>	15 mg total dust/m <sup>3</sup> 5 mg respirable dust/m <sup>3</sup>
Crystalline Silica	14808-60-7	0.1-1%	0.10 mg respirable quartz/m <sup>3</sup> NIOSH REL (8-hour TWA) = 0.05 mg respirable quartz dust/m <sup>3</sup>	(10 mg respirable dust/m <sup>3</sup> )/(percent silica+2)
Magnesium Oxide	1309-48-4	1.0-2.5%	10 mg total dust/m <sup>3</sup>	10 mg total dust/m <sup>3</sup>
Calcium Oxide	1305-78-8	0.3-1.0%	2 mg total dust/m <sup>3</sup>	5 mg total dust/m <sup>3</sup>

#### Trace Elements:

Lehigh Inland 'N' Cement is made from materials mined from the earth and is processed using energy provided by fuels. Trace amounts of chemicals, some of which may be potentially harmful, might be detected during chemical analysis. For example, in addition to the ingredients listed above, Lehigh Inland 'N' Cement may contain potassium and sodium sulfate compounds, chromium compounds (including up to 0.003% hexavalent chromium) and nickel compounds.

## MATERIAL SAFETY DATA SHEET

### SECTION 3 – HAZARDS IDENTIFICATION

#### Emergency Overview:

Lehigh Inland 'N' Cement is a light gray powder that poses little immediate hazard. A single short term exposure to the dry powder is not likely to cause serious harm. However, exposure of sufficient duration to wet Lehigh Inland 'N' Cement can cause serious, potentially irreversible tissue (skin or eye) destruction in the form of chemical (caustic) burns, including third degree burns. The same type of tissue destruction can occur if wet or moist areas of the body are exposed for sufficient duration to dry Lehigh Inland 'N' Cement.

#### Potential Health Effects:

- **Relevant routes of exposure are:**

Eye contact, skin contact, inhalation, and ingestion.

#### **Effects Resulting From EYE CONTACT:**

Exposure to airborne dust may cause immediate or delayed irritation or inflammation.

Eye contact by larger amounts of dry powder or splashes of wet Lehigh Inland 'N' Cement may cause effects ranging from moderate eye irritation to chemical burns and blindness. Such exposures require immediate first aid (see Section 4) and medical attention to prevent significant damage to the eye.

#### **Effects Resulting From SKIN CONTACT:**

Discomfort or pain cannot be relied upon to alert a person to a hazardous skin exposure. Consequently, the only effective means of avoiding skin injury or illness involves minimizing skin contact, particularly contact with wet cement. Exposed persons may not feel discomfort until hours after the exposure has ended and significant injury has occurred.

Exposure to dry Lehigh Inland 'N' Cement may cause drying of the skin with consequent mild irritation or more significant effects attributable to aggravation of other conditions. Dry Lehigh Inland 'N' Cement contacting wet skin or exposure to moist or wet Lehigh Inland 'N' Cement may cause more severe skin effects including thickening, cracking, or fissuring of the skin. Prolonged exposure can cause severe skin damage in the form of (caustic) chemical burns.

Some individuals may exhibit an allergic response upon exposure to Lehigh Inland 'N' Cement, possibly due to trace amounts of chromium. The response may appear in a variety of forms ranging from a mild rash to severe skin ulcers. Persons already sensitized may react to their first contact with the product. Other persons may first experience this effect after years of contact with Lehigh Inland 'N' Cement products.

#### **Effects Resulting From INHALATION:**

Lehigh Inland 'N' Cement may contain trace amounts of crystalline silica. Prolonged exposure to respirable free crystalline silica may aggravate other lung conditions. It also may cause delayed lung injury including silicosis, a disabling and potentially fatal lung disease, and/or other diseases. (Also see "Carcinogenic Potential" below.)

Exposure to Lehigh Inland 'N' Cement may cause irritation to the moist mucous membranes of the nose, throat, and upper respiratory system. It may also leave unpleasant deposits in the nose.

#### **Effects Resulting From INGESTION:**

Although small quantities of dust are not known to be harmful, ill effects are possible if larger quantities are consumed. Lehigh Inland 'N' Cement should not be eaten.

- **Carcinogenic Potential:**

Lehigh Inland 'N' Cement is not listed as a carcinogen by NTP, OSHA, or IARC. It may, however, contain trace amounts of substances listed as carcinogens by these organizations.

Crystalline silica, a potential trace level contaminant in Lehigh Inland 'N' Cement, is now classified by IARC as a known human carcinogen (Group 1). NTP has characterized respirable silica as "reasonably anticipated to be [a] carcinogen".

- **Medical Conditions That May Be Aggravated By Inhalation Or Dermal Exposure:**

Pre-existing upper respiratory and lung diseases.

Unusual (hyper) sensitivity to hexavalent chromium (chromium<sup>+6</sup>) salts.

## MATERIAL SAFETY DATA SHEET

### SECTION 4 - FIRST-AID MEASURES

**Eyes:**

Immediately flush eyes thoroughly with water. Continue flushing for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

**Skin:**

Wash skin with cool water and pH-neutral soap or a mild detergent intended for use on skin. Seek medical treatment in all cases of prolonged exposure to wet cement, cement mixtures, liquids from fresh cement products, or prolonged wet skin exposure to dry cement.

**Inhalation Of Airborne Dust:**

Remove to fresh air. Seek medical help if coughing and other symptoms do not subside. ("Inhalation" of gross amounts of Lehigh Inland 'N' Cement requires immediate medical attention.)

**Ingestion:**

Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

### SECTION 5 - FIRE-FIGHTING MEASURES

<b>Flammability:</b>	Not Flammable.
<b>Flash Point:</b>	Not Applicable.
<b>Lower Explosive Limit:</b>	Not Applicable.
<b>Upper Explosive Limit:</b>	Not Applicable.
<b>Auto ignition Temperature:</b>	Not Applicable.
<b>Sensitivity To Static Discharge:</b>	Not Applicable.
<b>Sensitivity To Impact:</b>	Not Applicable.
<b>Extinguishing Media:</b>	Not Applicable.
<b>Special Fire-Fighting Procedures:</b>	None.
<b>Hazardous Combustion Products:</b>	Not Applicable.
<b>Unusual Fire And Explosion Hazards:</b>	Not Applicable.

### SECTION 6 - ACCIDENTAL RELEASE MEASURES

Collect dry material using a scoop. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin. Wear appropriate personal protective equipment as described in Section 8.

Scrape up wet material and place in an appropriate container. Allow the material to "dry" before disposal. Do not attempt to wash Lehigh Inland 'N' Cement down drains.

Dispose of waste material according to local, provincial, state and federal regulations.

### SECTION 7 - HANDLING AND STORAGE

Keep Lehigh Inland 'N' Cement dry until used. Normal temperatures and pressures do not affect the material.

Promptly remove dusty clothing or clothing which is wet with cement fluids and launder before reuse. Wash thoroughly after exposure to dust or wet cement mixtures or fluids.

## MATERIAL SAFETY DATA SHEET

### SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Eye Protection:

When engaged in activities where cement dust or wet cement or concrete could contact the eye, wear safety glasses with side shields or goggles. In extremely dusty environments and unpredictable environments, wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with Lehigh Inland 'N' Cement or fresh cement products.

#### Skin Protection:

Prevention is essential to avoiding potentially severe skin injury. Avoid contact with unhardened (wet) Lehigh Inland 'N' Cement products. If contact occurs, promptly wash affected area with soap and water. Where prolonged exposure to unhardened Lehigh Inland 'N' Cement products might occur, wear impervious clothing and gloves to eliminate skin contact. Where required, wear boots that are impervious to water to eliminate foot and ankle exposure.

Do not rely on barrier creams; barrier creams should not be used in place of gloves.

Periodically wash areas contacted by dry Lehigh Inland 'N' Cement or by wet cement or concrete fluids with a pH-neutral soap. Wash again at the end of work. If irritation occurs, immediately wash the affected area and seek treatment. If clothing becomes saturated with wet concrete, it should be removed and replaced with clean dry clothing.

#### Respiratory Protection:

Avoid actions that cause dust to become airborne. Use local or general ventilation to control exposures below applicable exposure limits.

Use NIOSH/MSHA-approved (under 30 CFR 11) or NIOSH-approved (under 42 CFR 84 after July 10, 1998) respirators in poorly ventilated areas, if an applicable exposure limit is exceeded, or when dust causes discomfort or irritation.

#### Ventilation:

Use local exhaust or general dilution ventilation to control exposure within applicable limits.

### SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	White to gray powder.
<b>Odor:</b>	No distinct odor.
<b>Odor Threshold:</b>	Not applicable.
<b>Physical State:</b>	Solid (powder).
<b>pH (as a solid):</b>	Not applicable.
<b>pH (in water) (ASTM D 1293-95):</b>	12 to 13
<b>Solubility In Water:</b>	Slight.
<b>Vapor Pressure:</b>	Not applicable.
<b>Vapor Density:</b>	Not applicable.
<b>Boiling Point:</b>	Not applicable (i.e., >1000°C).
<b>Freezing Point:</b>	Not applicable.
<b>Melting Point:</b>	Not applicable.
<b>Specific Gravity (H<sub>2</sub>O = 1.0):</b>	Approximately 3.15.
<b>Evaporation Rate:</b>	Not applicable.
<b>Coeff. Water/Oil Dist.:</b>	Not applicable.

### SECTION 10 - STABILITY AND REACTIVITY

<b>Stability:</b>	Stable
<b>Conditions to avoid:</b>	Unintentional contact with water.
<b>Incompatibility:</b>	Lehigh Inland 'N' Cement reacts with water to produce a caustic solution, pH 12 to pH 13. Wet Lehigh Inland 'N' Cement is alkaline. As such it is incompatible with acids, ammonium salts and aluminum metal. Aluminum powder and other alkali and alkaline earth elements will react in wet mortar or concrete, liberating hydrogen gas. Lehigh Inland 'N' Cement dissolves in hydrofluoric acid producing corrosive silicon tetrafluoride gas. Silicates react with powerful oxidizers such as fluorine, chlorine, trifluoride and oxygen difluoride.

## MATERIAL SAFETY DATA SHEET

### SECTION 10 - STABILITY AND REACTIVITY (continued)

Lehigh Inland 'N' Cement may: react violently with acids producing heat, react explosively with maleic anhydride, react with nitro organic compounds to form explosive salts, and form flammable products when heated with phosphorous.

**Hazardous Decomposition:** Will not spontaneously occur. Adding water results in hydration and produces (caustic) calcium hydroxide.

Thermal decomposition may increase calcium oxide content.

**Hazardous Polymerization:** Will not occur.

### SECTION 11 - TOXICOLOGICAL INFORMATION

#### Effects Of Acute Exposure:

Lehigh Inland 'N' Cement and wet Lehigh Inland 'N' Cement mixtures can dry the skin, cause alkali burns and irritate the eyes and upper respiratory tract. Ingestion can cause irritation of the throat.

#### Effects Of Chronic Exposure:

Lehigh Inland 'N' Cement dust can cause inflammation of the tissue lining the interior of the nose and the cornea (white) of the eye.

### SECTION 12 - ECOLOGICAL INFORMATION

**Ecotoxicity:** No recognized unusual toxicity to plants or animals.

**Relevant Physical And Chemical Properties:** See Sections 9 and 10.

### SECTION 13 - DISPOSAL CONSIDERATIONS

Dispose of waste material according to local, provincial, state and federal regulations. (Since Lehigh Inland 'N' Cement is stable, uncontaminated material may be saved for future use.)

Dispose of bags in an approved landfill or incinerator.

### SECTION 14 - TRANSPORT INFORMATION

**Hazardous materials description/proper shipping name:** Lehigh Inland 'N' Cement is not hazardous under the TDG Act (Canada) or DOT regulations (USA).

**Hazard Class:** Not applicable.

**Identification Number:** Not applicable.

**Required Label Text:** Not applicable.

**Hazardous substances/reportable quantities (RO):** Not applicable.

### SECTION 15 - REGULATORY INFORMATION

#### Status under USDOL-OSHA Hazard Communication Rule, 29 CFR 1910.1200:

Lehigh Inland 'N' Cement is considered a "hazardous chemical" under this regulation, and should be part of any hazard communication program.

**Status under CERCLA/Superfund, 40 CFR 117 and 302:** Not listed.

#### Hazard Category under SARA (Title III), Sections 311 and 312:

Lehigh Inland 'N' Cement qualifies as a "hazardous substance" with delayed health effects.

## MATERIAL SAFETY DATA SHEET

### SECTION 15 - REGULATORY INFORMATION - CONTINUED

**Status under SARA (Title III), Section 313:**

Not subject to reporting requirements under Section 313.

**Status under TSCA (as of May 1997):**

Some substances in Lehigh Inland 'N' Cement are on the TSCA inventory list.

**Status under the Federal Hazardous Substances Act:**

Lehigh Inland 'N' Cement is a "hazardous substance" subject to statutes promulgated under the subject act.

**Status under California Proposition 65:**

This product contains chemicals (trace metals) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the manufacturer to give the above warning in the absence of definitive testing to prove the defined risks do not exist.

**Status under Canadian Environmental Protection Act:**

Not listed.

**Status under WHMIS:**

Lehigh Inland 'N' Cement is considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations (Class E - Corrosive Material) and is therefore subject to the labeling and MSDS requirements of the Workplace Hazardous Materials Information System (WHMIS).

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

### SECTION 16 - OTHER INFORMATION

<b>Prepared By:</b>	Robin Cowdrey
<b>Approved By:</b>	Robert Rimes
<b>Approval Date or Revision Date:</b>	November 1, 2002
<b>Date Of Previous MSDS:</b>	February 1, 2001
<b>MSDS Number:</b>	Not Applicable

**Other Important Information:**

Lehigh Inland 'N' Cement should only be used by knowledgeable persons. A key to using the product safely requires the user to recognize that Lehigh Inland 'N' Cement chemically reacts with water, and that some of the intermediate products of this reaction (that is, those present while a Lehigh Inland 'N' Cement product is "setting") pose a far more severe hazard than does Lehigh Inland 'N' Cement itself.

While the information provided in this material safety data sheet is believed to provide a useful summary of the hazards of Lehigh Inland 'N' Cement as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product.

In particular, the data furnished in this sheet does not address hazards that may be posed by other materials mixed with Lehigh Inland 'N' Cement to produce Lehigh Inland 'N' Cement products. Users should review other relevant material safety data sheets before working with this Lehigh Inland 'N' Cement or working on Lehigh Inland 'N' Cement products.

No representations or warranties with respect to the accuracy or correctness of this information, or of any kind or nature whatsoever are given, made or intended by Lehigh Inland Cement Limited. No legal responsibility whatsoever is assumed for this information, or for any injuries or damages, however caused which may result from the use of this information. This information is offered solely for informational purposes and is subject to your own independent investigation and verification.