SECTION 1 – PRODUCT AND MANUFACTURER INFORMATION

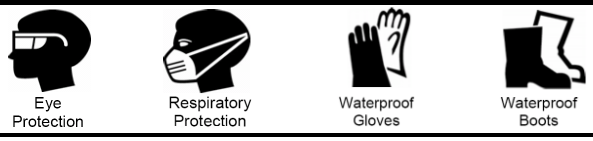
Product name :	Masonry cement
Other commercial name :	EVOLUTION N, S - Trillium
Manufacturer :	Ciment Quebec Inc. 145, du Centenaire boulevard St-Basile, Quebec, Canada G0A 3G0 Téléphone : (418) 329-2100 Télécopieur : (418) 329-3436
Components :	Calcium compounds. Calcium silicate compounds and other calcium compounds containing iron and aluminum make up the majority of this product.
Uses :	Main component in the majority of the mixtures of concrete.

WHMIS classification and pictograms

Class D2A Very toxic material

Class E Corrosive material

Personal protective equipment



SECTION 2 – INFORMATION ON PREPARATION OF MATERIAL SAFETY DATA SHEET

Prepared by :	Frederick Simoneau, Chief – Health ans safety
Preparation date :	September 4, 2014
Review date :	-----

SECTION 3 – INGREDIENT COMPOSITION

Nom	CAS #	% (p/p)	Dose létale (DL_{50}) Concentration létale (CL_{50})
Calcium carbonate	1317-65-3	30 - 50	----------
Tricalcium silicate	12168-85-3	10 - 40	----------
Dicalcium silicate	10034-77-2	5 - 50	----------
Tetracalcium-Alumino-Ferrite	12068-35-8	2 - 10	----------
Calcium aluminate	12042-78-3	1 - 15	
Silica-crystalline, Quartz	14808-60-7	0 - 5	400 mg/kg (ipr rat)
Calcium sulfate	7778-18-9	0 - 5	194 g/m^3 (human inhalation)
Magnesium oxyde	1309-48-4	0 - 2	----------
Calcium oxyde	1305-78-8	0 - 1	----------
Chromates	Various	0 - 0,005	----------

SECTION 4 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state, appearance, and colour :	Fine gray powder, solid	**Water/oil distribution coefficient :**	Not applicable
Odour :	Odorless	**Vapour pressure :**	Not applicable
Odour detection threshold :	Data unavailable	**Boiling point :**	> 1000ºC
		Freezing point :	Null, solid
Density (H_2O=1.0) :	2,8	**Solubility in water :**	0,1 à 1 %
pH (in water) :	12 - 13	**Vapour density :**	Not applicable
Flash point :	Not applicable	**Evaporation rate :**	Not applicable

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SECTION 5 – FIRE AND EXPLOSION RISKS			
Flammability limit :	Non-flammable and non-combustible	**Flash point :**	Not applicable
Self-ignition temperature :	Not applicable	**Explosion hazard :**	Not applicable
Hazardous combustion products :	None	**Fire danger :**	Not applicable
Upper/lower flammable or explosive limits :	Not applicable	**Explosion data – sensitivity to mechanical impact :**	Not applicable
General precautions :	Avoid breathing dust.		
How to fight fires :	This product is non-combustible. Fire fighters should wear a self-contained breathing apparatus with a full face mask and special protective clothing.		

SECTION 6 - REACTIVITY	
Stability/reactivity :	The product is stable.
Decomposition products :	Does not decompose on its own. May produce calcium silicate hydrates and calcium hydroxide if in contact with water.
Incompatible materials and conditions to avoid :	Can dissolve in hydrofluoric acid and produce gaseous, corrosive silicon tetrafluoride. The silicates react with oxidants like fluorine, chlorine trifluoride, and oxygen difluoride.

SECTION 7 – TOXICOLOGICAL PROPERTIES		
Exposure pathways :	Skin contact, eye contact, inhalation, and ingestion.	
General information :	Skin injury may occur without pain or discomfort. The hazardous ingredients when in contact with water produce calcium hydroxide, with an alkalinity level of pH 12 to 13. This level of alkalinity can cause skin and eye irritation.	
Effects of acute exposure :	**Skin :**	Cement and cement paste can dry the skin, cause irritations, burns, skin cracking as well as an allergic reaction in the presence of hexavalent chrome.
	Eyes :	Irritation, chemical burns and blindness in case of exposure to large amounts of cement.
	Inhalation :	Irritation of the higher respiratory tracts. It can cause irritation of the internal walls of the nose.
Effects of chronic exposure :	**Skin :**	Epidermis burns. People hypersensitive to chrome may exhibit allergic responses, from mild rash to severe skin ulcers.
	Inhalation :	May contain trace concentrations of silica-crystalline. Prolonged exposure to breathable free silica-crystalline can aggravate upper respiratory and lung diseases and cause silicosis.
Ingestion :	Ingestion of a small quantity of Portland cement is not harmful, nevertheless large quantities can be unhealthful and cause intestinal problems.	
Mutagenicity :	Given the available data, it has not been possible to establish the classification criteria.	
Synergism :	Data unavailable.	
Toxic effects on reproduction :	Given the available data, it has not been possible to establish the classification criteria.	
Teratogenicity and embryotoxicity :	Given the available data, it has not been possible to establish the classification criteria.	

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SECTION 7 – TOXICOLOGICAL PROPERTIES (cont'd)

Carcinogenicity :

The content of silica-crystalline of the Portland cement is low, since in the manufacturing process, even if the raw materials used can contain a variable amount, it is converted to silicate. Silica-crystalline is currently classified as a carcinogen (Group 1) by the *IARC*[1], as a product that has a suspected carcinogenic effect on humans according to the *ROHS*, and as a suspected human carcinogen (Group A2) according to the *ACGIH*[2]. Concrete also contains titanium dioxide, which may be carcinogenic for humans (Group 2B) according to the *IARC*.

Irritancy :

Causes skin irritation/burns. Sufficiently lengthy exposure to wet cement may cause serious injuries, due to (caustic) chemical burns.

Sensitization :

Given the available data, it has not been possible to establish the classification criteria.

Exposure limits : (*ROHS*[3])

COMPONENTS	# CAS	Type	Value	Remarks
Portland cement	65997-15-1	TAEV	5 mg/m³ respirable dust 10 mg/m³ total dust	**Rd**, **Note 1** **Td**, **Note 1**
Calcium carbonate	1317-65-3	TAEV	10 mg/m³	**Td**, **Note 1**
Tricalcium silicate	12168-85-3	Not applicable	Not applicable	Not applicable
Dicalcium silicate	10034-77-2	Not applicable	Not applicable	Not applicable
Tetracalcium-Alumino-Ferrite	12068-35-8	Not applicable	Not applicable	Not applicable
Calcium aluminate	12042-78-3	Not applicable	Not applicable	Not applicable
Silica-crystalline, Quartz	14808-60-7	TAEV	0,1 mg/m³	**Td**, **C2**, **ME**
Calcium sulfate	7778-18-9	TAEV	5 mg/m³ respirable dust 10 mg/m³ total dust	**Rd**, **Note 1** **Td**, **Note 1**
Magnesium oxyde	1309-48-4	TAEV	10 mg/m³	Not applicable
Calcium oxyde	1305-78-8	TAEV	2 mg/m³	Not applicable
Chromates	13907-45-4	Not applicable	Not applicable	Not applicable

TAEV : Time-weighted average exposure value. **C2 :** Carcinogenic effect suspected in humans.
ME : A substance to which exposure must be reduced to a minimum.
Td : Total dust. **Rd :** Respirable dust.
Note 1 : The standard corresponds to dust containing no asbestos and the percentage in silica-crystalline is less than 1%.

SECTION 8 – PREVENTIVE MEASURES AND PERSONAL PROTECTION

Skin protection :

Prevent contact with the skin by means of gloves, boots, and appropriate clothing. Frequently wash exposed areas with water and soap. Remove wet material that has become stuck to your clothing to avoid any contact with your skin.

Respiratory tract protection :

Use respiratory protection that has been approved by *NIOSH*[4] and by an industrial hygienist or any other qualified professional if concentrations exceed the limits indicated in Section 6. Respiratory protective equipment must be chosen, adjusted, maintained, and inspected in keeping with regulations. Avoid actions that cause dust dispersion.

Eye protection :

Wear airtight safety glasses in a dusty environment. Do not wear contact lenses.

[1] ***IARC*** **:** *International agency for research on cancer*
[2] ***ACGIH*** **:** *American conference of industrial hygienists*
[3] ***ROHS*** **:** *Regulation respecting occupational health and safety (Quebec)*
[4] ***NIOSH*** **:** *National institute for occupational safety and health*

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SECTION 8 – PREVENTIVE MEASURES AND PERSONAL PROTECTION (cont'd)	
Specific technical controls :	Ventilation units must have sufficient capacity and be spatially distributed to ensure compliance with standards of exposure. Use with adequate ventilation to comply with the limits listed in Section 6. Local exhaust ventilation is recommended when the mechanical ventilation system cannot maintain product concentrations in the air of the work site below the suggested limit of exposure. When non-protected staff are present, product concentrations in the air must always be maintained below the maximum admissible concentration.
Leak and spill procedures :	Isolate the site. Prevent unprotected non-essential personnel from going into the spill zone. Keep personnel away from low-lying areas. Stay upwind from the spill. Limit access to the spill zone until the cleanup is over. Ensure the cleanup is done only by qualified personnel who wear appropriate devices for respiratory protection. Gather up the material and dump it in an appropriate recipient. Scrape away any wet product and put it in a recipient. Prevent discharge into the sewer system, the ground, or watercourses.
Elimination of hazardous wastes:	Waste production should be avoided or minimized as much as possible. Get rid of surplus and non-recyclable products by making arrangements with a certified waste-disposal contractor. When getting rid of this product, any solutions, and any by-products, you must always comply with the Environment Quality Act, as well as all applicable local/regional and/or other governmental laws. Avoid dispersing material spills, as well as drainage from the spills and any contact with the ground, waterways, drains, and the sewer system.
Handling methods and equipment :	Comply with regulations; use with adequate ventilation; avoid operations that produce a cloud of dust. Avoid inhaling the dust, wear an eye protection device and an appropriate respiratory protection device if ventilation is insufficient. Handle away from incompatible materials. Wear appropriate protective clothing, avoid all contact with your skin. Do not wear contact lenses when handling the product. Immediately remove contaminated clothes and clean them. Do not ingest. Use corrosion-resistant devices. Do not discharge waste into the sewer system.
Storage requirements :	Store in an airtight container, in a cool and dry place. Keep away from water, combustible materials, acids and incompatible materials.
Special shipping information :	Is not subject to the Transportation of Dangerous Goods Act and Regulations (Canada). Is not subject to the U.S. DOT.

SECTION 9 – FIRST AID	
Eyes :	While keeping your eyelids open, rinse your eyes immediately and abundantly with water for at least 15 minutes (or longer until the product is eliminated). Remove your contact lenses and continue to rinse. Consult a physician.
Skin :	Wash exposed areas with water and pH-balanced soap until the product is eliminated. Remove contaminated clothing. Consult a physician.
Inhalation :	In cases of dust inhalation, take the person to a well-ventilated area and place him or her in a semi-seated position. If the person is not breathing, administer artificial respiration. In case of breathing difficulties, give oxygen. Transfer the person immediately to the closest emergency medical service. Consult a physician.
Ingestion :	Immediately after ingestion: give plenty of water to drink. Do not induce vomiting. Never administer anything through the mouth to an unconscious person. Rinse his or her mouth with water.

WARNING
The above information is based on data from reliable sources. Nonetheless, this information is provided to product users only for convenience of reference. Ciment Québec Inc., disclaims any liability for any personal or property-related loss, damage, or injury (including death) that may result directly or indirectly because of reference to the above product use information.

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