1. Product identification

Product Name; Plycem® Laminar Fibercement Trim
***Description*:** Primed Fibercement Trim manufactured from boards made with a mixture of Portland cement, chalk and recycled cellulose fiber.
***Manufacturer*:** The Plycem Company, Inc.
***Manufacturing Facilities*:** Plycem Construsistemas Costa Rica, S.A.
Plycem Construsistemas El Salvador, S.A. de C.V.

2. Composition

The estimated composition of Plycem® Laminar Fibercement Trims is shown below:

Component	CAS Registry No.	Percentage in board Estimated Range[1]
Hydrated tricalcium disilicate	NA	25 - 40
Calcium carbonate	1317-65-3	10 - 40
Calcium hydroxide	1305-62-0	0 - 20
Hydrated tricalcium monosulfoaluminate	NA	7 - 10
Fiber mix - organic matter	9004-34-6	8 - 10
Moisture	NA	6 - 10
Hydrated hexacalcium aluminum ferrite	NA	6 - 10
Alite, tricalcium silicate	12168-85-3	0 - 5
Hydrated tricalcium trisulfoaluminate	NA	1 - 3
Belite, dicalcium silicate	10034-77-2	0.1 – 2.0
Aluminate, tricalcium aluminate	12042-78-3	0.1 – 1.0
Ferrite, tetracalcium ferroaluminate	12068-35-8	0.1 – 1.0
Calcium sulfate	7778-18-9	0.1 – 1.0
Quartz	14808-60-7	0.1 – 1.0
Free calcium oxide	1305-78-8	0.1 - 0.5
Acrylic polymer	NA	0.1 - 0.5
Nepheline syenite	37244-96-5	0.1 - 0.2
Talc	14807-96-6	0.1 - 0.2
Titanium dioxide	13463-67-7	0.1 - 0.2

[1] The product is approximately 90% carbonated and hydrated on supply. Its calcium carbonate content is likely to increase through time at the expense of calcium hydroxide and calcium oxide. Any anhydrous calcium silicate and aluminate phases are likely to be slowly hydrated.

3. Hazards identification

Acute effects

Ingestion: Unlikely under normal conditions of use; ingested dust may cause irritation or abrasion to the mouth and gastrointestinal tract.

Eye: Dust may cause irritation to the eye as a result of mechanical abrasion and/or alkalinity (if calcium oxide and/or calcium hydroxide are present).

Skin: Dust may cause irritation as a result of mechanical abrasion and/or alkaline components (if calcium oxide and/or calcium hydroxide are present).

Inhalation: Dust may cause irritation of the nose, throat and airways resulting in coughing and sneezing. Some individuals, particularly those with asthma and other pre-existing respiratory illness, may be particularly susceptible to effects.

Effects of prolonged and/or repeated exposure by inhalation

Respirable mineral dust (including calcium carbonate, calcium sulfate, calcium aluminate and calcium silicate minerals): Long term exposure to respirable dust in the workplace is associated with the development of pneumoconiosis (scarring of the lungs), increased risks of bronchitis and reduced life expectancy.

Cellulose fiber: The results of animal experiments suggest that repeated exposure to large quantities of respirable cellulose may cause inflammation and scarring of the lung.

Crystalline silica: Repeated or prolonged inhalation of dust containing crystalline silica may result in reduced pulmonary functions, difficulty breathing, long damage and silicosis. There may exist a relationship between silicosis and certain cancers. Crystalline silica inhaled from occupational areas in the form of quartz is classified as group 1 (carcinogenic to humans) by IARC.

Titanium dioxide: This component is classified as group 2B carcinogen (possibly carcinogen to humans) by IARC.

4. First Aid Measures

Ingestion: If swallowed, dilute by drinking large amounts of water, seek medical attention.

Eye contact: Flush with water or saline for at least 15 minutes; seek medical attention if redness persists or if changes in vision occur.

Skin contact: Wash with mild soap and water.

Inhalation: Remove to fresh air, if wheezing and/or shortness of breath develop, seek medical attention.

5. Fire-fighting measures

The product is neither flammable nor an explosion hazard and no special precautions are required.

Hazardous combustion products: This product is not considered combustible.

Extinguishing media: Use methods suitable for the surrounding fire.

Fire fighting Equipment/Instructions: Wear appropriate protective equipment.

NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0.

6. Accidental release measures

Areas that have been contaminated by dust arising from cutting, drilling, sawing, crushing or grinding the product should be cleaned using an industrial vacuum cleaner fitted with a high efficiency filter for the removal of fine airborne particles. If a suitable vacuum cleaner is not available, the dust should be swept or mopped up using water to prevent material becoming airborne.

7. Handling and storage

Avoid the creation of airborne dust and/or breathing dust from this material.

No special requirements for storage, unless stated otherwise in the package directions.

8. Control of exposure and personal protection

The product in its intact state does not present a health hazard. Dust created by cutting, drilling, sawing, crushing or grinding the product may be hazardous to health. Exposure to any airborne dust is potentially hazardous to health and measures should be taken to minimize exposure. Relevant workplace exposure limits for dust are shown below:

Substance	Exposure limits – as 8 hour time weighted average		
	OSHA PEL	ACGIH TLV	NIOSH
inhalable dust	15 mg/m^3	10 mg/m^3	10 mg/m^3
respirable dust	5 mg/m^3	3 mg/m^3	5 mg/m^3
calcium sulfate, calcium carbonate, calcium aluminate phases, calcium silicate, cellulose fiber	general limits for inhalable and respirable dust apply		
calcium hydroxide	15 mg/m^3 (total dust) 5 mg/m^3 (respirable dust)	5 mg/m^3	5 mg/m^3
calcium oxide	5 mg/m^3	2 mg/m^3	2 mg/m^3
quartz	30/(%SiO_2 + 2) mg/m^3 (total dust) 10/(%SiO_2 + 2) mg/m^3 (respirable dust)	0.025 mg/m^3 (respirable fraction)	0.05 mg/m^3 (respirable fraction)
talc	20 mppcf	2 mg/m^3	2 mg/m^3
titanium dioxide	15 mg/m^3	10 mg/m^3	

*Maximum Exposure Limit

Precautions/Personal Protective Equipment

Operations with the product that are likely to create dust should be undertaken in well-ventilated areas, ideally outside.

Tools used for working with the product should be fitted with water suppression and surfaces should be kept wet while cutting, sawing or drilling is performed.

Vacuum extraction lines can be used to remove dust while working with powered tools but these are less effective in controlling dust than water-based systems.

In the absence of suitable dust suppression measures, suitable personal respiratory protection should be worn. This could be an appropriate disposal respirator (dust mask) or a powered respirator, depending on the duration and intensity of exposure.

Care should be taken to ensure that respirators meet appropriate US or EU standards to provide adequate protection with respect to respirable dust (advice on the selection of respirators can be found at the NIOSH website: www.cdc.gov/niosh).

Respirators should be correctly fitted in accordance with the manufacturer's instructions. Individuals with facial hair may have difficulty in obtaining a satisfactory seal.

Good housekeeping should be practiced to keep work areas free from deposited dust. Dust should be removed using an industrial vacuum cleaner with high efficiency filtration. If dust has to be removed by sweeping, then water should be used to prevent dust becoming airborne.

Exposure to dust on work clothes should be avoided while changing or removing clothes, work clothes should be washed regularly to prevent a build up of loose dust.

9. Physical and Chemical Properties

Appearance: Solid pale grey board.

Specific Gravity at 25^{o}C: 1.00-1.10.

Boiling/melting point, vapor pressure, flash point, volatility: not relevant.

Solubility in water: Less than 0.1 gL^{-1}.

10. Stability and reactivity

Chemical stability: Stable under normal conditions of use.

Conditions to avoid: Avoid dispersion of dust in air and/or inhalation of dust.

Incompatibility: None known.

Hazardous decomposition: None known.

11. Toxicological information

Calcium carbonate, calcium silicate, calcium sulfate, calcium aluminate

Epidemiological studies of workers have shown that repeated exposure to high concentrations of respirable dust is associated with the development of pneumoconiosis (scarring of the lungs), impaired lung function and respiratory illnesses such as bronchitis and emphysema. No specific effects have been reported in association with any of these calcium minerals. Animal experiments have shown that exposure to high concentrations of a wide range of low toxicity dusts is associated with inflammation of the lung and ultimately the development of fibrosis (pneumoconiosis). Effects are not seen at respirable dust concentrations equivalent to exposure concentrations of 3 mg/m^3 in humans.

The adverse effects of the coarser fraction of inhalable dust include irritation of the eyes, nose and throat.

Calcium oxide, calcium hydroxide

These caustic materials are irritating to the eyes, nose, respiratory system and skin with calcium oxide having a greater effect than the hydroxide. The no effects level for irritation in workers exposed to calcium hydroxide is reported to be 9-10 mgm^{-3}. Prolonged exposure can cause inflammation of the respiratory passages and ulceration and perforation of the nasal septum.

Cellulose fiber

Animal studies have shown that exposure to high concentrations of respirable cellulose fiber can cause inflammation of the lungs leading to scarring of the lungs (analogous to that associated with mineral dusts).

Quartz

Inhalation of respirable silica dust may cause discomfort or irritation of the nose, throat and airways. This may result in coughing, wheezing, sneezing or shortage of breath. Chronic effects of repeated or prolonged exposure to dust containing silica may cause silicosis and increase the risk of bronchitis, tuberculosis, lung cancer, renal disease and scleroderma.

Titanium dioxide

Classified in group 2B (possibly human carcinogen) by IARC.

12. Ecological information

No information available for the product.

13. Disposal considerations

Constitutes non-hazardous inert construction/demolition waste that may be recycled or disposed of to a landfill. Dispose of in accordance with local regulatory regime.

14. Transport information

US DOT Information: This product is not classified as a hazardous material to transport.

TDG Information: This product is not classified as a dangerous good to transport.

15. Regulatory information

US Federal Regulations

General Product Information:

Components of this product have been checked against the non-confidential TSCA inventory by CAS Registry Number. Components not identified on this non-confidential inventory are either exempt from listing (i.e. polymers, hydrates) or are listed on the confidential inventory as declared by the supplier.

CERCLA:

None of the components of this product are listed under CERCLA (40 CFR 302.4) and present in the material at an amount exceeding the Reportable Quantity (RQ).

State Regulations

General Product Information:

Other state regulations may apply. Check individual state requirements.

Component Analysis – State:

The following components appear on one or more of the following state hazardous substances list:

Component	CAS #	CA	MA	MN	NJ	PA	RI
Limestone (related to Silica, Quartz)	1317-65-3	No	Yes	Yes	Yes[1]	Yes	Yes
Calcium hydroxide	1305-62-0	Yes	Yes	Yes	Yes	Yes	Yes
Cellulose	9004-34-6	No	Yes	Yes	No	Yes	Yes
Calcium sulfate	7778-18-9	No	Yes	Yes	No	Yes	No
Calcium oxide	1305-78-8	Yes	Yes	Yes	Yes	Yes	Yes
Talc	14807-96-6	Yes	Yes	Yes	Yes	Yes	Yes
Titanium dioxide	13463-67-7	No	Yes	Yes	Yes	Yes	Yes
Quartz	14808-60-7	No	Yes	Yes	Yes	Yes	Yes

California Safe Drinking Water and Toxics Enforcement Act (Proposition 65):

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

Canadian WHMIS Information

General Product Information: WHMIS Classification:

This product is not a Controlled Product according to the Canadian Hazardous Products Act.

Component Analysis - WHMIS IDL:

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Limestone	1317-65-3	1 % (related to Silica-crystalline, quartz)
Calcium hydroxide	1305-62-0	1 %
Quartz	14808-61-7	0.1 %

Additional Regulatory Information

General Product Information: No additional information available.

Component Analysis – Inventory:

Component	CAS #	TSCA	DSL	EINECS
Limestone	1317-65-3	Yes	No	Yes
Calcium hydroxide	1305-62-0	Yes	Yes	Yes
Cellulose	9004-34-6	Yes	Yes	Yes
Alite, tricalcium silicate	12168-85-3	Yes	Yes	Yes
Aluminate, tricalcium aluminate	12042-78-3	Yes	Yes	Yes
Belite, dicalcium silicate	10034-77-2	Yes	Yes	Yes
Ferrite, tetracalcium ferroaluminate	12068-35-8	Yes	No	Yes
Calcium sulfate	7778-18-9	Yes	Yes	Yes
Calcium oxide	1305-78-8	Yes	Yes	Yes
Nepheline syenite	37244-96-5	No	Yes	No
Talc	14807-96-6	Yes	Yes	Yes
Titanium dioxide	13463-67-7	Yes	Yes	Yes
Quartz	14808-60-7	Yes	Yes	Yes

16. Other information

Smokers are at increased risk of developing respiratory illness as a result of exposure to airborne dust in the workplace.

17. Contact Point

If additional information is required please contact:

Phone (506) 2551-0866 Ext. 6123

Fax (506) 2551-6288

E-mail: r_d_department@plycem.com

MSDS reviewed by Department of Research & Development
Research and Development Manager
The Plycem Company

Effective Date: March 10, 2009

NOTE: To the best of our knowledge, the information contained herein is accurate, but no representation, guarantees or warranty, expressed or implied, is made as to the accuracy, reliability or completeness of the information. The Plycem Company urges persons receiving this information to make their own determination as to the information's suitability and completeness for their particular application.