


Plycem® Laminar Fibercement		
Materials Safety Data Sheet		
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1. Product identification

Product Name: Plycem® Laminar Fibercement.

Description: Fibre cement board manufactured from a mixture of Portland cement, chalk and recycled cellulose fibre.

Manufacturer: Plycem Construsistemas Costa Rica, S.A.

2. Composition

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

Mineral phase	CAS Registry No.	Percentage in board
		Estimated Range ¹
alite, tricalcium silicate	12168-85-3	< 5.0
belite, dicalcium silicate	10034-77-2	< 2.0
aluminite, tricalcium aluminate	12042-78-3	< 1.0
ferrite, tetracalcium ferroaluminate	12068-35-8	< 1.0
calcium sulfate	7778-18-9	< 1.0
free calcium oxide	1305-78-8	< 0.5
calcium carbonate	1317-65-3	10.0 - 40.0
fiber mix - organic matter	9004-34-6	8.0 - 9.0
hydrated tricalcium disilicate		25.0 - 35.0
hydrated tricalcium trisulfoaluminate		1.5 - 3.0
hydrated tricalcium monosulfoaluminate		7.0 - 10.0
hydrated hexacalcium aluminumferrite		6.0 - 9.0
calcium hydroxide	1305-62-0	< 20.0
moisture		6.0 - 10.0

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 or hydroxide are present).

Skin: dust may cause irritation as a result of mechanical abrasion and/or alkaline components (if Calcium oxide or 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 sulphate, 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.

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

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 or shortness of breath develop, seek medical attention.

5. Fire-fighting measures

The product is not flammable or an explosion hazard and no special precautions are required.

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.

No special requirements for storage.

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 minimise exposure. Relevant workplace exposure limits for dust are shown below:

Substance	Exposure limits (mgm ⁻³) – as 8 hour time weighted average		
	OSHA PEL	ACGIH TLV	UK
inhalable dust	15	10	10
respirable dust	5	3	4
calcium sulfate, calcium carbonate, calcium aluminate phases cellulose fibre	general limits for inhalable and respirable dust apply		
calcium silicate:			
inhalable	10	10	10
respirable	5	3	4
calcium hydroxide		5	5
calcium oxide		2	2

*Maximum Exposure Limit

Precautions

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

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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 practised 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°C: 1.00-1.10.

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

Solubility in water: less than 0.1 gL⁻¹.

10. Stability and reactivity

Stable under normal conditions of use.

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 mgm⁻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 fibre

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

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12. Ecological information

No special precautions required.

13. Disposal considerations

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

14. Transport information

No special labelling required

15. Regulatory information

No special labelling required

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 Centro Plycem in Costa Rica; Phone (506) 551-0866 Ext. 5303 Fax (506) 592-1109.

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