

Green Wall[®] microfibers M09

Product Description

Green Wall[®] (gel form) is a high-performance suspension of Microfibrillated cellulose (MFC) derived from sustainably sourced Natural fiber. Produced through a mechanical refining process without chemical modification, it retains natural lignin, enhancing its unique properties. The microfiber suspension forms a highly entangled network, providing exceptional mechanical strength, viscosity modification, and barrier properties. Its biodegradable nature make it ideal for applications in bioplastics, coatings, adhesives, and advanced composite materials.

Features and Benefits

- 100% biobased and renewable
- Biodegradable and eco-friendly
- High surface area and fibrillation
- Contain natural lignin
- Non-irritating and non-toxic
- Temperature stability up to 250 °C
- Enhances mechanical strength

Typical Properties

Property	Unit	Result
Appearance (form)		Aqueous gel
Appearance (Color)		Yellowish
Solid content	% w/w	2 - 2.5
Lignin content	%	3.5
Cellulose content	%	71.0
Hemicellulose content	%	6.5
Decomposition Temperature (TGA in N ₂)	°C	255
Crystallinity (XRD)	%, Segal	54
Density	g/cm ³	1.00 - 1.04
Average fiber diameter	nm	< 60
Surface property		Hydrophilic
PH*		4.5- 7
Conductivity (1% concentration at 25°C)	μS/cm	800
Viscosity (Rotational Rheometer, 25 °C, at 100 s ⁻¹)	cP	450 - 600
Shelf life at 2-5 °C	months	6
Shelf life at 25 °C	months	3

*The slightly acidic pH values observed are due to the presence of additives incorporated to enhance product stability and shelf life.

Potential Uses

Green Wall[®] is a pre-dispersed cellulose microfiber suspension that integrates easily into various formulations. It enhances stability, viscosity, and strength in bioplastics, coatings, adhesives, and more, offering new possibilities for sustainable applications.

Usage Instruction

Green Wall[®] can be easily incorporated into aqueous or polymer-based formulations. For optimal dispersion, stir well before use. It can be used as received or diluted to achieve the desired consistency.

Solvent Options and Compatibility

For Green Wall[®] fiber, the choice of solvents depends on its composition, particularly the presence of lignin and its hydrophilic nature. As a mechanically refined product without chemical modification, it is primarily dispersible in water-based systems, making water the main dispersion medium. However, it can also be compatible with a range of organic solvents, allowing for flexibility in various applications. Compatible solvents include ethanol (for aqueous-ethanol mixtures in coatings and dispersions), isopropanol (IPA) (for controlled drying and dispersion), glycerol (used in bio-based formulations for plasticization), propylene glycol (to improve stability in emulsions), acetic acid (for fiber swelling and modification), and dimethyl sulfoxide (DMSO) (to enhance solubility in specialized applications). These solvents can be used depending on formulation requirements, such as viscosity adjustment, stability, and compatibility with other ingredients.

Storage and Usable Life

Green Wall[®] has a shelf life of 6 months from the production date when stored in its original, unopened container. For optimal storage, keep the product in a cool, dry place at a temperature between 2°C and 25°C. Once opened, it is recommended to refrigerate the product to maintain its stability and performance. **DO NOT FREEZE** the product, as this may affect its dispersion properties.

Health and Safety Information

For detailed safety, health, and environmental information regarding Green Wall[®], please refer to the Safety Data Sheet (SDS).

Disposal

Dispose of Green Wall[®] in accordance with local, state, and federal regulations. Since the product is biobased and biodegradable, it can generally be disposed of through standard waste disposal methods, such as composting or in designated industrial waste facilities. Ensure that the disposal process is safe and environmentally responsible.

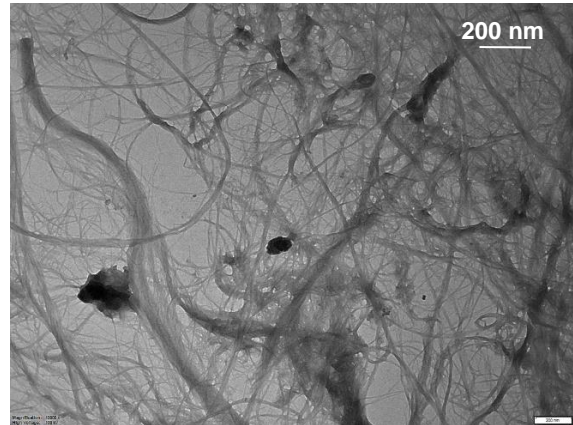
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Images:

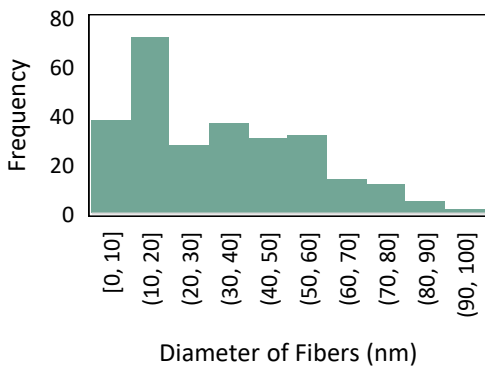
Green Wall[®] - ~2% aqueous slurry



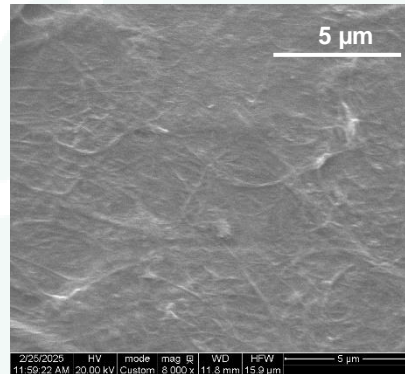
TEM Image



TEM analysis



SEM Image



Rheology test

