

ENGINEERED MINERAL FUNCTIONAL ADDITIVE FOR BIOPOLYMER REINFORCEMENT

EMforce[®] Bio additive

EMforce[®] Bio additive is an engineered mineral with high aspect ratio, designed to provide a unique balance of excellent impact toughness and high flexural modulus (stiffness) for biopolymers. EMforce[®] Bio additive provides a simple, cost effective method for greatly improving the impact resistance of biopolymers while maintaining stiffness.

Key Benefits

- Change polymer failure mode from Brittle to 100% Ductile state
- Greatly improve Impact Strength
- Ability to Downgauge
- Improved Tear and Puncture resistance
- Achieve higher Color of composites
- Extension of resin for cost savings
- Non-Silica based mineral

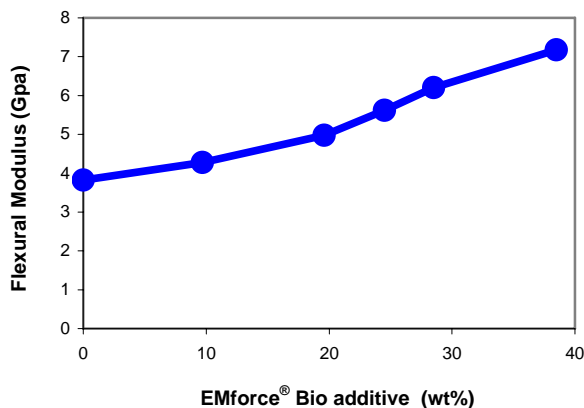
Typical Properties

Average Major axis (microns)	1.1
Average Minor axis	0.25
Aspect ratio	5.4
Specific Gravity	2.7
Dry Brightness (Hunter Y, Rd value)	94 min.
Surface Area (meters ² /gram)	10

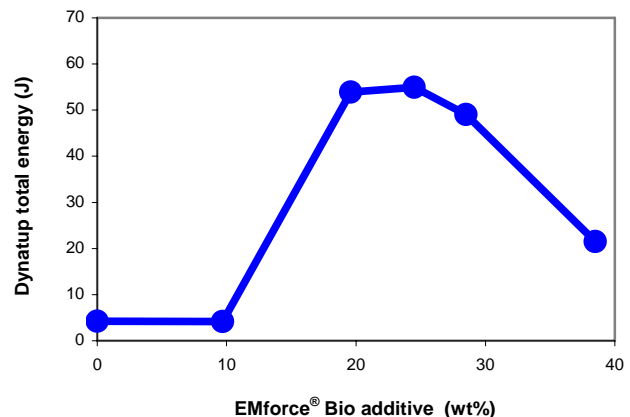
Chemical Composition

Calcium Carbonate	Ca	> 33%
Moisture	H ₂ O	< 0.2% max.
(% weight loss @ 110°C)		

Flexural Modulus of Poly(lactic Acid) (PLA) with EMforce[®] Bio



Room Temperature Impact of Poly(lactic Acid) (PLA) with EMforce[®] Bio



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