

**TECHNICAL DATA SHEET****Product Name:** CGTECH-ESR-PPBC30**Description:** Bio-carbon reinforced polypropylene biocomposite.

Physical Properties	Typical Values*	Test Method
Melt Flow Index	28.0 ± 2.0 g/10min @230°C, 2.16-kg	ISO 1133
Moisture Content	≤1.0%	ASTM D6980
Density	1.01 g/cm ³	ISO 1183
Tensile Strength at Yield	21.00 MPa	ISO 527
Tensile Elongation at Yield	2.80 %	ISO 527
Tensile Elongation at Break	11.00 %	ISO 527
Flexural Modulus	2.000 GPa	ISO 178
Notched Izod Impact at 23°C	2.700 kJ/m ²	ISO 180
Mold Shrinkage	0.13%	

Notes: *Values provided are typical and should not be interpreted as product specification.

The results reported are typical with the caveat that due to variable processing methods and conditions, no guarantees or warranties are expressed or implied, including expressions of fitness for purpose or merchantability. This is a patent pending formulation.





Suggested Processing Guidelines

Preconditioning

Dry down to 0.1% at 90°C in desiccant dryer using 40°C dew point of air possible for two to three hours. The resin is typically supplied in or around a moisture content of 0.5%. Please check incoming moisture to verify; if found to be above specification, please increase drying time to reduce moisture content equal to or below 0.1%. Please ensure the air temperature found within the desiccant dryer does not exceed 90°C.

Purging Sequence

At start-up and shutdown, it is recommended that the system be thoroughly purged to avoid cross-contamination. The following guidelines should be followed:

1. Clean the extruder and bring temperatures to steady state across each zone. Typically employing a low melt thermoplastic such as polypropylene or polyethylene
2. Vacuum hopper to prevent cross-contamination
3. Introduce the resin into screw, ensuring to limit residence time, such that at no time during molding the material resides within the barrel for more than fifteen minutes; if this has been the case, please purge before resuming molding
4. Purge again once molding is completed with highly viscous or low melt thermoplastic

Molding Parameters

The following processing conditions are recommended to optimize mold flow, and physical characteristics.

Barrel Temperature: 165°C (329°F), consistent from hopper to 195°C (383°F) at injection tip

Injection Tip Temperature: 220°C (428°F) (maximum)

Hot Runner: max. 220°C (428°F) +/- 2°C

Mold Condition: Keep B side (moving side) at room temperature (no chiller), approximately 35°C (95°F)

Back Pressure: below 10% of injection pressure

Caution:

Because of resin shrinkage, being 0.13%, molding preferably should be done in molds specifically made using the mold flow analysis (MFA) of our resin and the .UDB file. Using a mold intended for higher shrinkage resin like fossil polymer polypropylene for example, is possible – requires specific assistance from CGTech on machine-side manipulation of pack-fill cycle and shot size and other molding cycle parameters based on experience mainly to get dimensions within tolerance.

Cooling cycle reduction advantage may not be fully realized when using our resin in a mold not designed with MFA.

