



FC 20040

Technical Data Sheet (TDS)

Date of issue: 01/18/2022 Version: 1.0

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PLA Compounds

### SECTION 1: Product Description

FC 20040 is made with Earth Renewable Technologies bio-based microfiber-additive package developed for manufacturing for thermoforming.

### SECTION 2: Physical Properties & Guidelines for use

FC 20040 is supplied as off-white pellets. Temperatures during transportation and storage may not exceed 80°C. Storage time of unopened bags may not surpass 24 months at room temperature. Drying prior to processing is essential. A moisture content less degradation. The property values listed below should be viewed as guidelines only and may vary based on processing conditions. No warranties of any kind, either expressed or implied are made regarding products described or regarding designs, data or information set forth. Process temperatures must not exceed 230°C. In order to achieve high Heat Deflection Temperatures, hot molding or annealing of the part is required.

Drying: dry the material for 4 – 6 hours at 80°C.

|                  | Settings, °F* | Settings, °C* |
|------------------|---------------|---------------|
| Feed Throat      | 70            | 21            |
| Feed Section     | 260-300       | 130-150       |
| Zone 1           | 375-395       | 191-200       |
| Zone 2           | 375-395       | 191-200       |
| Zone 3           | 375-395       | 191-200       |
| Zone 4           | 375-395       | 191-200       |
| Hot Runner       | 375-395       | 191-200       |
| Nozzle           | 395-410       | 200-210       |
| Cold Mold Set up | 80-90         | 27-32         |
| Screw Speed      | 40-100rpm     |               |

\*These settings are intended as a starting point. Optimization may be required

| Physical Properties*            |             |                |
|---------------------------------|-------------|----------------|
|                                 | Test Method | Value          |
| Melt Flow Rate (190°C, 2.16 kg) | RD-007      | 4 - 7 g/10 min |
|                                 |             | Axial: 0.54%   |
| Molding Shrinkage               | ASTM D955   | Lateral: 1.7%  |
|                                 |             | Axial: 1.0%*   |
|                                 |             | Lateral: 2.5%* |



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| Mechanical Properties*       |                    |           |
|------------------------------|--------------------|-----------|
|                              | Test Method        | Value     |
| Tensile Strength             | ASTM D638:2014     | 21 MPa    |
|                              |                    | 20 MPa*   |
| Elongation at Break          | ASTM D638:2014     | 100%      |
|                              |                    | 128%*     |
| Flexural Modulus             | ASTM D790:2017     | 3120 MPa  |
|                              |                    | 2450 MPa* |
| Notched Izod Impact Strength | ASTM D256:10(2018) | 249 J/m   |
|                              |                    | 251 J/m   |
| HDT (before crystallization) | ISO 75-1/-2        | 70°C      |
| HDT (after crystallization)  | ISO 75-1/-2        | 120°C*    |

\*Data obtained from hot molded ASTM standard test bars. Results obtained at 100% add in.

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