

## TECHNICAL DATA SHEET

# PHACT™ CB0104A

PHACT™ CB0104A is composed of a semi-crystalline PHA (scPHA), an amorphous polyhydroxyalkanoate (aPHA), and CaCO<sub>3</sub>. Specifically, the aPHA used is PHACT™ A1000P grade from CJ Biomaterials and the scPHA used is PHACT™ S1000P grade also from CJ Biomaterials. This product is designed for injection molding applications, specifically for cutlery.

### PROPERTIES OF PHACT™ CB0104A

| Properties                                | Units    | ASTM No | CB0104A |
|-------------------------------------------|----------|---------|---------|
| Forms                                     | -        |         | Pellet  |
| Specific Gravity                          | -        | D792    | 1.55    |
| Hardness - Max                            | Shore D  | D2240   | 50      |
| Elongation at Break <sup>1</sup>          | %        | D638    | 6       |
| Ultimate Tensile Strength <sup>1</sup>    | MPa      | D638    | 27      |
| Melting Point <sup>2</sup>                | °C       | D3418   | 165     |
| Heat Deflection Temperature/0.455MPa      | °C       | D648    | >140C   |
| Glass Transition Temperature <sup>2</sup> | °C       | D3418   | 0       |
| Melt Flow Rate (180 °C, 2.16 kg)          | g/10 min | D1238   | 10      |

1) Injection specimens conform to ASTM D638. Crosshead speed 50 mm/min for tensile strength.

2) Differential Scanning Calorimeter (DSC), peak of endotherm. Heating rate 10 °C /min.

### PROCESSING CONDITION – INJECTION MOLDING

|                  |                 |                     |              |
|------------------|-----------------|---------------------|--------------|
| Dry Temperature  | 75 °C x 4 hours | Mold Temperature    | 60 – 70 °C   |
| Feed Temperature | 25 ~ 40 °C      | Compression section | 165 ~ 175 °C |
| Melt Temperature | 165 ~ 175 °C    | Nozzle              | 165 ~ 175 °C |

## Drying & Moisture Management

PHACT CB0104A will be supplied in pellet form in aluminum foil-lined packaging with a moisture content of 400 ppm or less when packed. A moisture content of less than 0.04% (400ppm) is recommended to prevent viscosity degradation during processing. Typical drying conditions are 4 hours at 75 °C (167 °F) with a dew point of -40 °C (-40 °F). The resin should not be exposed to atmospheric conditions after drying. Keep the package sealed until ready to use and promptly reseal any unused material.

## Injection Molding Details

- Minimize injection speed to limit pressure surges and flash
- If the material is having difficulty ejecting, attempt to increase the mold temperature to 70 °C

## Safety Precautions

PHACT CB0104A must be handled and processed with adequate ventilation and proper personal protective equipment. Temperatures above 190°C (374°F) can result in considerable polymer degradation. Therefore, adequate ventilation should be provided where hot polymer may reside for long periods such as when multiple shots are being held in the barrel.

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