TDS updated 3/2025

PHACT™ CA1165A

This product is designed for injection molding applications. It is based on PHA/PLA (A1000P and PLA) and minerals. All ingredients used in this product are certified (TUV and BPI, where applicable) as industrially compostable. Specifically, the aPHA used is PHACT A1000P grade from CJ Biomaterials, and the PLA used is injection molding grade. PHACT CA1165A is suitable for injection molding purposes.

PROPERTIES OF PHACT CA1165A

Properties	Units	ASTM No	CA1165A
Forms	-		**Pellet**
Specific Gravity	-	D792	**1.4**
Hardness - Max	Shore D	D2240	**58**
Secant Modulus (1mm)	MPa	D638	**1800**
Elongation at Break[1)]	%	D638	**3**
Ultimate Tensile Strength[1)]	MPa	D638	**38**
Melting Point[2)]	℃	D3418	**165**
Glass Transition Temperature[2)]	℃	D3418	**aPHA -15 / PLA 60**
Melt Flow Rate (190 ℃, 2.16 kg)	g/10 min	D1238	**15~20**

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

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

PROCESSING CONDITION INJECTION MOLDING

Dry Temperature	60 ℃ x 5 hours	**Mold Temperature**	110 ~ 120 ℃
Feed Temperature	25~40 ℃	**Compression section**	175 ~ 185 ℃
Melt Temperature	175 ~ 185 ℃	**Nozzle**	180 ~ 185 ℃

Drying & Moisture Management

CA1165A 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 highly recommended to prevent viscosity degradation during processing. Typical drying conditions are 5 hours at 60 °C (140 °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

CA1165A is not compatible with polyolefins and special care must be given to purging and cleaning the line (including feeders to avoid contamination) prior to the introduction of this product.

- A mold temperature of **110-120°C** is recommended for proper material crystallization, particularly important in high performance applications which require high HDT.
- For the normal temperature purpose applications are acceptable to run cold mold processing as well. However, it may exhibit a different shrinkage ratio compared to hot mold process. It may have a lower shrinkage ratio.

Safety Precautions

CA1165A 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.