

PRODUCT DATA SHEET

DESCRIPTION

Toray Cetex[®] MC1100 PPS is a thermoplastic bulk molding compound (BMC) based upon Toray Cetex[®] TC1100 PPS thermoplastic uni-directional tape. Toray Cetex[®] MC1100 PPS is offered on standard-modulus fibers in lengths of up to 25.4 mm (1"). Intermediate-modulus fibers and alternative lengths may also be available. Thermoplastic bulk molding compound allows part fabrication with short cycle times. Many composite compression molded parts are used to replace metal parts for weight savings or replace plastic injection molded parts where higher strengths or stiffness are required. Toray Cetex[®] MC1100-4A, PPS, 25.4 mm (1") represents standard-modulus AS-4 fiber chopped to 25.4 mm (1") in length.

FEATURES

- ▶ **Rapid processing**
- ▶ **Allows easy fabrication of complex shapes**
- ▶ **Easily processible with compression molding or thermforming processes**
- ▶ **Fire-retardant resin system, surpasses 35/35 OSU requirements**
- ▶ **Excellent solvent resistance**
- ▶ **Low void content with good structural performance**
- ▶ **Ambient temperature storage**
- ▶ **Resin system has a T_g of 90°C (194°F)**
- ▶ **Remoldable**

PRODUCT TYPE

Polyphenylene Sulfide Thermoplastic Bulk Molding Compound

TYPICAL APPLICATIONS

- ▶ Metal to composite replacement
- ▶ Interior structures
- ▶ Automotive underhood applications
- ▶ Oil & Gas gaskets and pipe
- ▶ Aircraft brackets and structures
- ▶ Secondary access doors and enclosures

SHELF LIFE

Indefinite at 25°C (77°F)

TYPICAL NEAT RESIN PROPERTIES

Density	1.35 g/cc
Melt Temperature	280°C (536°F)
Recommended Processing Temperature	330°C (625°F)
Moisture Absorption	< 1%
Flammability	V-0
Elongation at Yield	3%
Poisson's Ratio	0.36

Tensile Strength	90.3 MPa (13.1 ksi)
Tensile Modulus	3.8 GPa (0.551 Msi)
Compression strength	148 MPa (21.5 ksi)
Compression Modulus	3.0 GPa (0.43 Msi)
Flexural Strength	125 MPa (18.1 ksi)
Flexural Modulus	3.7 GPa (0.54 Msi)

Izod Unnotched	199 kJ/m ² (94.6 ft-lb/in ²)
Izod Notched	15.6 kJ/m ² (7.4 ft-lb/in ²)
CET	52.2 ppm/°C (29 ppm/°F)



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MECHANICAL PROPERTIES

Property	Condition	Method	Typical Results	
Tensile Strength 0°	RTD	ASTM D 3039	207 MPa	30 ksi
Tensile Modulus 0°	RTD	ASTM D 3039	41.4 GPa	6.0 Msi
Flexural Strength 0°	RTD	ASTM D 790	496 MPa	72 ksi
Flexural Modulus 0°	RTD	ASTM D 790	33.8 GPa	4.9 Msi

Toray Cetex[®] MC1100-4A, PPS, 25.4 mm (1") Fiber Length. Standard Modulus AS-4

TYPICAL CONSOLIDATION PARAMETERS:

Toray Cetex MC1100 PPS Thermoplastic BMC Molding Guidelines

1. Pre-weigh the desired amount of molding compound
2. Apply high temperature resistant mold release to mold cavity
3. Distribute molding compound in mold cavity as desired (bulk factor is approximately 4–8 to 1)
4. Heat mold or material to 330°C (625°F)
5. Apply one or more “debulk” pressure cycles as required. Apply pressure to 500 psi (34 bar), release. Apply pressure to 1000 psi (69 bar), release, apply pressure to 1500 psi (103 bar)
6. Consolidation Cycle: Pressurize to 500–1500 psi. Hold until all material has reached a temperature of 330°C (625°F) for 10 minutes
7. Cool Cycle: Cool mold under pressure at 5–20°C/minute to maintain crystallinity for best solvent resistance. Release pressure when part temperatures is below material T_g



Revised 07/2019

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