

# PRODUCT DATA SHEET



TENCATE ADVANCED COMPOSITES

## TenCate Cetex® MC1200 PEEK Thermoplastic BMC

### PRODUCT TYPE

Polyetheretherketone 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

Stable indefinitely at 77°F (25°C)

### PRODUCT DESCRIPTION: TENCATE CETEX MC1200 PEEK

TenCate Cetex® MC1200 is a thermoplastic bulk molding compound based upon Cetex TC1200 PEEK thermoplastic unitape. TenCate Cetex MC1200 is offered on standard modulus fibers lengths of up to 1 inch. (Intermediate modulus fibers and alternative lengths may also be available.) Thermoplastic bulk molding compound allows part fabrication with short cycle times. This product allows complex shapes to be made with varying wall thickness, integrated ribs and reinforcing structure. Many composite compression molded parts are used to replace metal parts for weight savings or they replace plastic injection molded parts where higher strengths or stiffness are required. "TenCate Cetex MC1200-4A, PEEK, 1 inch" represents standard modulus AS-4 fiber chopped to one inch (25.4mm) in length.

### PRODUCT BENEFITS/FEATURES: TENCATE CETEX MC1200 PEEK

- 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, excellent moisture resistance
- High strength for good structural performance
- Ambient temperature storage
- Resin system has a Tg of 290°F (143°C)
- Remoldable

### NEAT RESIN PHYSICAL PROPERTIES

Density .....	1.30 g/cc
Melt Temperature .....	649°F (343°C)
Recommended Processing Temperature .....	725°F (385°C)
Moisture absorption .....	0.4%
Tensile strength.....	14.5 ksi (100 MPa)
Tensile modulus .....	0.537 Msi (3.7 GPa)
Elongation at break.....	15%
Flexural strength .....	24.7 ksi (170 MPa)
Flexural modulus.....	0.456 Msi (4.1 GPa)
Izod notched.....	2.1 ft-lb/in <sup>2</sup> (4.5 kJ/m <sup>2</sup> )

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**LAMINATES FABRICATED WITH 1 INCH LENGTH TENCATE CETEX® MC1200-4A BULK MOLDING COMPOUND USING XPRESS COMPRESSION MOLDING PROCESS.**  
Used 146 gsm faw AS-4 12k unitape with 34% resin content.

Properties	Condition	Method	Results	
Tensile Strength 0°	RTD	ASTM D 3039	41.9 ksi	288.9 MPa
Tensile Modulus 0°	RTD	ASTM D 3039	6.3 Msi	43.4 GPa
Flexural Strength 0°	RTD	ASTM D 790-3	95.4 ksi	657.8 MPa
Flexural Modulus 0°	RTD	ASTM D 790-3	5.8 Msi	40.0 GPa
Compressive Strength	RTD	ASTM D 6484	45.3 ksi	312.3 MPa
Compressive Modulus	RTD	ASTM D 6484	7 Msi	48.3 GPa
Open Hole Comp. Strength	RTD	ASTM D 6484	40.9 ksi	282.0 MPa

### FLAME SMOKE TOXICITY TEST RESULTS

Verticle Burn, 60 sec.	Required	Actual Result	Comment
Maximum Burn Time	15 seconds	0	PASS
Maximum Burn Length	6 inches	0.7	PASS
Maximum burning particle time	3 seconds	None	PASS
Horizontal Burn Max Burn Rate	2.5 inches	0	PASS
<b>45° Burn 30 Second</b>			
Maximum Burn Time	15 seconds	0	PASS
Maximum Burn Length	10 seconds	0	PASS
Max Burning Particle Time	No Penetration	None	PASS
<b>OSU Results</b>			
2 minute heat release	65 KW-min/m2	0	PASS
Maximum Peak Heat Release		39	PASS
FAA Smoke Density	200 units	0	PASS
NBS Smoke Density (flaming)	200 units	0	PASS
NBS Smoke Density (non flaming)	200 units	1	PASS

Drager Tube Toxicity (BSS7239)	Flaming	Non Flaming	Comment
HCN 150PPM	1	1	PASS
CO 1000 PPM	88	18	PASS
NOx 100 PPM	4	<1	PASS
SO2 100 PPM	<1	<1	PASS
HF 100 PPM	<1	<1	PASS
HCl 150 PPM	<1	<1	PASS

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### TYPICAL CONSOLIDATION PARAMETERS: TENCATE CETEX MC1200 PEEK 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 725°F (385°C).
5. Apply one or more “debulk” pressure cycles as required (optional step).  
Apply pressure to 500 psi (34 bar), release, repeat as necessary
6. Consolidation Cycle: Pressurize to 500-1000 psi. Hold until all material  
has reached a minimum temperature of 725°F (385°C) for 0-2 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<sub>g</sub> 290°F (143°C).

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*All data given is based on representative samples of the materials in question. Since the method and circumstances under which these materials are processed and tested are key to their performance, and TenCate Advanced Composites has no assurance of how its customers will use the material, the corporation cannot guarantee these properties.*

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## TENCATE ADVANCED COMPOSITES

18410 Butterfield Blvd.  
Morgan Hill, CA 95037 USA  
Tel: +1 408 776 0700

2450 Cordelia Road  
Fairfield, CA 94534 USA  
Tel: +1 707 359 3400

Amber Drive, Langley Mill  
Nottingham, NG16 4BE UK  
Tel: +44 (0)1773 530899

[www.tencateadvancedcomposites.com](http://www.tencateadvancedcomposites.com)

info@tcac-usa.com (USA)  
tcacsales@tencate.com (Europe)