

Cyclics® Engineered Products

Cyclics® C65

Cyclics C65 is a highly filled mineral tooling material for higher temperatures, resulting in superior quality finish on carbon fiber components. Responding to industry demand, Cyclics developed C65, a unique thermoplastic that provides dust-free, high-speed machining and a self-releasing, higher quality surface finish than alternative products. Machinists will see instant time savings with pattern-to-part applications.

Benefits

- **Easy Machinability**
Tools can be machined much faster than traditional materials due to increased cutting speeds — up to six times faster than mild steel. The ribbon swarf formation and dust elimination creates a much healthier work environment and reduced machine wear.
- **Surface Finish**
C65 offers a superior surface finish with good edge stability, preserving sharp details.
- **Higher Heat Distortion Temperature**
C65 has a measured HDT of 210°C (410°F).
- **No Residual Stress**
Because C65 is an engineered thermoplastic, large blocks can be made with little or no residual stress, yielding a homogeneous product throughout. The days of constant turning of “live” boards have been eliminated.
- **Custom Service**
Due to the high degree of flexibility and the unique properties, Cyclics offers a custom shape casting service.



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Applications

C65 can be used in a wide variety of tooling applications, including VARTM, RTM, RIM, injection molding and the production of high-quality carbon fiber parts.

Cyclics recommends performing validation trials to evaluate performance in your specific application.

Safety

C65 is safe to handle without the need for specialized equipment. Additionally there are no requirements for storage. Always wear suitable eye protection when machining the product. Please consult the MSDS for the full safety requirements.

Availability and Pricing

Cyclics offers a variety of C65 sizes to meet your needs. Custom sizing is also available. Contact Cyclics for pricing.

Technical Assistance

To ensure satisfaction and to help maximize the benefits of C65, Cyclics application engineers are available to answer your questions.



Physical and Mechanical Data

Property	Value Metric (Imperial)	Unit	ASTM Standard
Density	1.98 (124)	g/cm ³ (lb/ft ³)	C128
Tensile Modulus	10,800 (1.56 x 10 ⁶)	MPa (psi)	D638
Compression Strength	124 (1.8 x 10 ⁴)	MPa (psi)	D695
CTE (23°C—80°C)	42 (23)	10 ⁻⁶ /K (10 ⁻⁶ /°F)	E831
Hardness	91	Shore D	ISO 868
HDT 1.8 MPa	210 (410)	°C (°F)	D648
Thermal Conductivity	1.57 (0.91)	W/(m·K) @25°C (BTU·ft/[h·ft ² ·°F])	C417-05

Machining

To achieve the optimum results, Cyclics recommends the following machining parameters:

Cutter	2 or 3 Flute Tungsten Carbide
Speed	3,000 to 20,000 RPM
Cut Depth	65 mm max (roughing) (2.56 in max)
Feed	Up to 8 m/min (315 in/min)

Available Sizes

Inches	Millimeters
2 x 12 x 12	100 x 400 x 400
2 x 24 x 60	50 x 500 x 1000
4 x 24 x 60	100 x 500 x 1000
6 x 24 x 60	150 x 500 x 1000

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