

Technical Information



EMERGE™ ABS 5103 MED

Advanced Resin

Overview

EMERGE™ ABS 5103 MED is a 30% glass filled ABS for use in approved medical applications. This resin exhibits a property balance of flow, rigidity, and dimensional stability, and has undergone biocompatibility testing based on ISO 10993 (Biological Evaluation of Medical Devices).

Main Characteristics:

- Tested under ISO 10993
- Suitable for EtO and Radiation Sterilization

Applications:

- Medical Applications
- Surgical Device Handles
- Drug Delivery Devices
- Medical Equipment

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.28 g/cm ³	1.28 g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR)			ASTM D1238
220°C/10.0 kg	15 g/10 min	15 g/10 min	
230°C/3.8 kg	3.9 g/10 min	3.9 g/10 min	
Molding Shrinkage			ASTM D955
Flow	1.5E-3 to 2.5E-3 in/in	0.15 to 0.25 %	
Across Flow	1.5E-3 to 2.5E-3 in/in	0.15 to 0.25 %	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength ¹			ASTM D638
Yield	11400 psi	78.3 MPa	
Break	11200 psi	77.5 MPa	
Tensile Elongation ¹			ASTM D638
Yield	3.1 %	3.1 %	
Break	3.1 %	3.1 %	
Flexural Modulus	1.10E+6 psi	7620 MPa	ASTM D790
Flexural Strength	15700 psi	108 MPa	ASTM D790
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact			ASTM D256
73°F (23°C), 0.126 in (3.20 mm), Injection Molded	0.96 ft-lb/in	51 J/m	
Unnotched Izod Impact			ASTM D4812
73°F (23°C), 0.126 in (3.20 mm), Injection Molded	4.3 ft-lb/in	230 J/m	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ASTM D648
66 psi (0.45 MPa), Unannealed	207 °F	97.2 °C	
264 psi (1.8 MPa), Unannealed	197 °F	91.5 °C	
Vicat Softening Temperature			
--	207 °F	97.4 °C	ASTM D1525 ²
--	225 °F	107 °C	ASTM D1525 ³

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	176 °F	80 °C
Drying Time	3.0 to 4.0 hr	3.0 to 4.0 hr
Processing (Melt) Temp	428 to 500 °F	220 to 260 °C
Mold Temperature	68 to 140 °F	20 to 60 °C

Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

¹ 0.20 in/min (5.0 mm/min)

² Rate A (50°C/h), Loading 2 (50 N)

³ Rate B (120°C/h), Loading 1 (10 N)

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