Ultramid[®] Endure D3G7 BK20560 Polyamide 66

Ultramid Endure D3G7 BK20560 is a glass fiber reinforced injection molding grade with high stiffness, very good flowability, and excellent heat aging resistance up to at least 220 degC (428 degF).

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm ³	1183	1.43	
Mold Shrinkage, parallel, %	294-4	0.3	
Mold Shrinkage, normal, %	294-4	0.87	
MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile Modulus, MPa	527		
23°C		11,300	7,600
150°C		4,200	-
Tensile stress at break, MPa	527		
23°C		200	130
150°C		84	-
Tensile strain at break, %	527		
23°C		2.9	5.1
150°C		6.7	-
Flexural Strength, MPa	178		
23°C		300	200
Flexural Modulus, MPa	178		
23°C		10,600	7,400
ІМРАСТ	ISO Test Method	Dry	Conditioned
Charpy Notched, kJ/m ²	179		

-30°C		10.7	13.9
23°C		10.2	13.4
Charpy Unnotched, kJ/m ²	179		
-30°C		60	60
23°C		80	90
THERMAL	ISO Test Method	Dry	Conditioned
Melting Point, °C	3146	260	-
HDT A, ° C	75	240	-
HDT B, ° C	75	260	-
Coef. of Linear Thermal Expansion, Parallel, mm/mm °C		.14 to .20 X10-4	-
Coef. of Linear Thermal Expansion, Normal, mm/mm °C		.80 to 1.3 X10-4	-
ELECTRICAL	ISO Test Method	Dry	Conditioned
Comparative Tracking Index	IEC 60112	250	225
Volume Resistivity (Ohm-m)	IEC 60093	3E12	4E08
Dielectric Strength, KV/mm	IEC 60243-1	48	29

Processing Guidelines

Material Handling

Max. Water content: 0.12%, Moisture Optimal: <0.05%

Material is supplied in sealed containers and drying prior to molding in a dehumidifying or desiccant dryer is recommended. Drying parameters are dependent upon the actual percentage of moisture in the pellets and typical pre-drying conditions are 2-4 hours at 180F (83C). Further information concerning safe handling procedures can be obtained from the Safety Data Sheet (MSDS), or by contacting your BASF representative.

Typical Profile

Melt Temperature 280-300°C (536-572°F) Mold Temperature 80-90°C (176-194°F) Injection and Packing Pressure 35-125 bar (500-1500 psi)

Mold Temperatures

A mold temperature of 80-90 °C (176-194 °F) is recommended, however temperatures of as low as 45 °C (113 °F) and as high as 105 °C (221 °F) can be used where applicable.

Pressures

Injection pressure controls the filling of the part and should be applied for 90% of ram travel. Packing pressure affects the final part and can be used effectively in controlling sink marks and shrinkage. It should be applied and maintained until the gate area is completely frozen off.

Back pressure can be utilized to provide uniform melt consistency and reduce trapped air and gas. Minimal back pressure should be utilized to prevent glass breakage.

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and prevent premature freezing. Surface appearance is directly affected by injection rate.

Note

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