

BASF Capron® GR20 HS 20% Glass-Filled Nylon 6 (Dry) (discontinued **)

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6 , 20% Glass Fiber Filled

Material Notes:

Capron GR20 HS is a heat stabilized 20% glass reinforced polyamide 6 injection molding compound possessing a balance of engineering properties combined with excellent processability and surface aesthetics. It is also available non-heat stabilized (Capron GR20) and/or pigmented versions. Capron GR20 HS is ideally suited for more demanding performance applications such as safety helmet parts, washers, gears, engine and motor parts, chutes, and higher temperature environments. Data provided by Allied Signal. Processing: Max. water content 0.12%. Product is supplied in sealed containers and drying is not required. If drying becomes necessary, a dehumidifying or desiccant dryer operating at 85°C (185 °F). Is recommended. Drying time is dependent on moisture level. Melt Temperature: 270-295 degC (518-563 degF). Mold Temperature: 80-95 degC (176-203 degF). Injection and Packing Pressure: 35-125 bar (500-1500psi) This product can be processed over a wide range of mold temperatures; however, for applications where aesthetics critical, a mold surface temperature of 80-95 degC (176-203 degF) is required. 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. A maximum of 3.5 bar (50 psi) is recommended to minimize glass fiber breakage. Fast fill rates are recommended to insure uniform melt delivery to the cavity and prevent premature freezing. Surface appearance is directly affected by injection rate. Capron® is no longer a part of the BASF standard line. The BASF nylon products have been consolidated in the Ultramid ® line.

Order this product through the following link:

http://www.lookpolymers.com/polymer_BASF-Capron-GR20-HS-20-Glass-Filled-Nylon-6-Dry-nbspdiscontinued-.php

Physical Properties	Metric	English	Comments
Density	1.28 g/cc	0.0462 lb/in³	ISO data
Water Absorption	1.3 %	1.3 %	24 hrs; ISO data
Moisture Absorption at Equilibrium	2.2 %	2.2 %	50% RH; 23°C; ISO data
Water Absorption at Saturation	7.6 %	7.6 %	in water; 23°C; ISO data
Linear Mold Shrinkage	0.0025 cm/cm	0.0025 in/in	ISO data
	0.0040 cm/cm	0.0040 in/in	ASTM data MD
Linear Mold Shrinkage, Transverse	0.011 cm/cm	0.011 in/in	ISO Data

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	150 MPa	21800 psi	Same value from ASTM and ISO tests; 5 mm/min.
Elongation at Break	3.5 %	3.5 %	ASTM, 5 mm/minl
	3.5 %	3.5 %	ISO, 5 mm/minl
Tensile Modulus	7.00 GPa	1020 ksi	same value from ASTM and ISO test.

Mechanical Properties	Metric	English	Comments
Shear Modulus	2.60 GPa	377 ksi	calculated

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	25.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	13.9 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ISO data
	@Temperature 20.0 $^{\circ}\text{C}$	@Temperature 68.0 $^{\circ}\text{F}$	
CTE, linear, Transverse to Flow	110 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	61.1 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ISO data
	@Temperature 20.0 $^{\circ}\text{C}$	@Temperature 68.0 $^{\circ}\text{F}$	
Melting Point	220 $^{\circ}\text{C}$	428 $^{\circ}\text{F}$	ASTM and ISO test
Deflection Temperature at 0.46 MPa (66 psi)	215 $^{\circ}\text{C}$	419 $^{\circ}\text{F}$	ISO data
Deflection Temperature at 1.8 MPa (264 psi)	200 $^{\circ}\text{C}$	392 $^{\circ}\text{F}$	ISO Data

Electrical Properties	Metric	English	Comments
Electrical Resistivity	$\geq 1.00\text{e}+15$ ohm-cm	$\geq 1.00\text{e}+15$ ohm-cm	ISO data

Processing Properties	Metric	English	Comments
Processing Temperature	275 $^{\circ}\text{C}$	527 $^{\circ}\text{F}$	See Materials Notes
Mold Temperature	95.0 $^{\circ}\text{C}$	203 $^{\circ}\text{F}$	See Materials Notes
Drying Temperature	85.0 $^{\circ}\text{C}$	185 $^{\circ}\text{F}$	See Materials Notes

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