Product Information

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Petra® 140
PET (Polyethylene Terephthalate)

BASF
The Chemical Company

Product Description

Petra 140 is a 45% glass reinforced polyethylene terephthalate (PET) injection molding compound offering an increased level of strength, stiffness, high temperature performance, dimensional stability. Excellent resistance to creep under load, and maintains the inherent chemical and electrical properties associated with polyesters.

Applications

Petra 140 is generally recommended for applications such as load bearing structural housings and mechanical components.

PHYSICAL	ASTM Test Method	Property Value
Specific Gravity	D-792	1.70
Mold Shrinkage (1/8" bar, in/in)		0.002
MECHANICAL	**ASTM Test Method**	**Property Value**
Tensile Strength, Break, MPa (psi)	D-638	
23C (73F)		180 (26,100)
Elongation, Break, %	D-638	
23C (73F)		3
Flexural Modulus, MPa (psi)	D-790	
-40C (-40F)		14,500 (2,100,000)
23C (73F)		13,100 (1,900,000)
121C (250F)		4,690 (680,000)
Flexural Strength, MPa (psi)	D-790	
-40C (-40F)		370 (53,600)
23C (73F)		285 (41,300)
121C (250F)		110 (16,000)
Rockwell Hardness, R Scale	D-785	116
IMPACT	**ASTM Test Method**	**Property Value**
Notched Izod Impact, J/M (ft-lbs/in)	D-256	
23C (73F)		110 (2.1)
THERMAL	**ASTM Test Method**	**Property Value**
Melting Point, C(F)	D-3418	245 (473)
Heat Deflection @ 264 psi (1.8 MPa) C(F)	D-648	225 (437)
Coef. of Linear Thermal Expansion, mm/mm C (in/in F)	E-831	0.22 X10-4
ELECTRICAL	**ASTM Test Method**	**Property Value**
Volume Resistivity, 1.5 mm	D-257	>1E13

Processing Guidelines

Material Handling
Max. Water content: 0.02%

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To ensure optimum part performance, this product must be dried prior to molding and maintained at a moisture level of less than 0.02%, with a preferred moisture target of less than 0.015%. A dehumidifying hopper dryer mounted on the molding machine and equipped with alternating desiccant beds and air temperature/dew point indicators is recommended. Drying time is 2 - 4 hours at 120 degC (248 degF). Further information concerning safe handling procedures can be obtained from the Material Safety Data Sheet. Alternatively, please contact your BASF representative.

Typical Profile
Melt Temperature 280-300 degC (536-572 degF)
Mold Temperature 100-110 degC (212-230 degF)
Injection and Packing Pressure 35-125 bar (500-1500 psi)

Mold Temperatures
This product can be processed over mold temperatures of 80-120 degC (176-248 degF); however, for optimizing surface appearance, dimensional stability and part performance, mold surface temperatures of 100-110 degC (212-230 degF) are preferred.

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. recommended to minimize glass fiber breakage.

Fill Rate
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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