

IMPET® 330R | PET | Glass Reinforced

Description

Impet 330R is a 30% glass reinforced injection moldable polyester containing post consumer recycled PET. It provides an excellent combination of strength, stiffness, and high temperature resistance.

Physical properties	Value	Unit	Test Standard
Density	1580	kg/m ³	ISO 1183
Mold shrinkage - parallel	0.1-0.3	%	ISO 294-4
Mold shrinkage - normal	.8	%	ISO 294-4
Humidity absorption (23°C/50%RH)	0.16	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	11000	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	159	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	2.3	%	ISO 527-2/1A
Flexural modulus (23°C)	11000	MPa	ISO 178
Flexural strength (23°C)	229	MPa	ISO 178
Charpy impact strength @ 23°C	27.0	kJ/m ²	ISO 179/1eU
Charpy impact strength @ -30°C	24.0	kJ/m ²	ISO 179/1eU
Charpy notched impact strength @ 23°C	8.5	kJ/m ²	ISO 179/1eA
Charpy notched impact strength @ -30°C	7.4	kJ/m ²	ISO 179/1eA
Notched impact strength (Izod) @ 23°C	8.5	kJ/m ²	ISO 180/1A

Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	250	°C	ISO 11357-1,-2,-3
Glass transition temperature (10°C/min)	90	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	224	°C	ISO 75-1/-2
DTUL @ 0.45 MPa	240	°C	ISO 75-1/-2
Coeff.of linear therm. expansion (parallel)	0.18	E-4/°C	ISO 11359-2
Coeff.of linear therm. expansion (normal)	0.77	E-4/°C	ISO 11359-2

Electrical properties	Value	Unit	Test Standard
Relative permittivity - 100 Hz	2.83	-	IEC 60250
Relative permittivity - 1 MHz	3.46	-	IEC 60250
Dissipation factor - 1 MHz	140	E-4	IEC 60250
Volume resistivity	7E14	Ohm*m	IEC 60093
Surface resistivity	1E16	Ohm	IEC 60093
Electric strength	32	kV/mm	IEC 60243-1
Comparative tracking index CTI	275	-	IEC 60112

Test specimen production	Value	Unit	Test Standard
Processing conditions acc. ISO	7792-2	-	Internal
Injection molding melt temperature	285	°C	ISO 294
Injection molding mold temperature	135	°C	ISO 294
Injection molding flow front velocity	275	mm/s	ISO 294
Injection molding hold pressure	60	MPa	ISO 294

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Typical injection moulding processing conditions



Pre Drying:

Necessary low maximum residual moisture content: 0.01%

To avoid hydrolytic degradation during processing, Impet resins have to be dried to a moisture level equal to or less than 0.01%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-40°F (-40°C) at 275°F (135°C) for 4 hours.

For subsequent storage of the material in the dryer until processed (<= 60 h) it is necessary to lower the temperature to 100° C.

Drying time: 4 h

Drying temperature: 130 - 140 °C

Temperature:

	ϕManifold	ϕMold	ϕMelt	ϕNozzle	ϕZone4	ϕZone3	ϕZone2	ϕZone1	ϕFeed	ϕHopper
min (°C)	260	110	260	270	265	260	260	255	255	20
max (°C)	290	121	290	290	280	275	275	265	265	50

Speed:

Injection speed: medium-fast

Injection Molding

Rear Temperature	500-520(260-270)	deg F (deg C)
Center Temperature	520-530(270-275)	deg F (deg C)
Front Temperature	530-540(275-280)	deg F (deg C)
Nozzle Temperature	530-550(275-290)	deg F (deg C)
Melt Temperature	520-570(270-300)	deg F (deg C)
Mold Temperature	230-250(110-120)	deg F (deg C)
Back Pressure	0-25	psi
Screw Speed	50-75	rpm
Injection Speed	Medium/Fast	

Injection speed, injection pressure and holding pressure have to be optimized to the individual article geometry. To avoid material degradation during processing low back pressure and minimum screw speed have to be used. Overheating of the material has to be avoided, in particular for flame retardant grades. Up to 25% clean and dry regrind may be used.

Contact Information

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General Disclaimer

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Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use.

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