

IMPET® 830R | PET | Mineral / Glass Reinforced

Description

Impet 830R is a 35% glass/mineral reinforced injection moldable polyester made with recycled PET. It provides an excellent combination of strength, stiffness, warp resistance, and high temperature capability together with excellent processability (high flow) during molding.

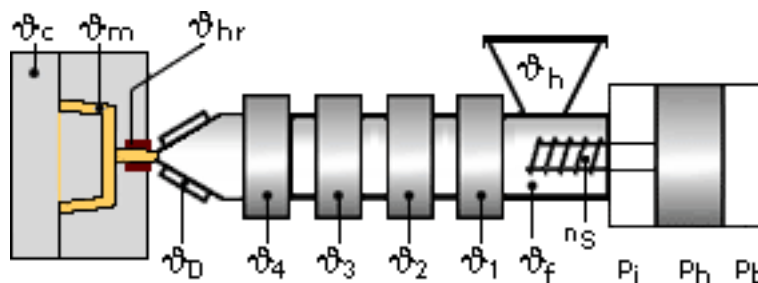
Physical properties	Value	Unit	Test Standard
Density	1600	kg/m ³	ISO 1183
Mold shrinkage - parallel	0.1-0.3	%	ISO 294-4

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	10700	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	118	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	2.1	%	ISO 527-2/1A
Flexural modulus (23°C)	11000	MPa	ISO 178
Flexural strength (23°C)	190	MPa	ISO 178
Charpy notched impact strength @ 23°C	7	kJ/m ²	ISO 179/1eA
Notched impact strength (Izod) @ 23°C	6.3	kJ/m ²	ISO 180/1A

Thermal properties	Value	Unit	Test Standard
DTUL @ 1.8 MPa	216	°C	ISO 75-1-2
DTUL @ 0.45 MPa	235	°C	ISO 75-1-2
Coeff.of linear therm. expansion (parallel)	0.31	E-4/°C	ISO 11359-2
Coeff.of linear therm. expansion (normal)	0.72	E-4/°C	ISO 11359-2

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

Typical injection moulding processing conditions



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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:

	ϑ ^ϑ Manifold	ϑ ^ϑ Mold	ϑ ^ϑ Melt	ϑ ^ϑ Nozzle	ϑ ^ϑ Zone4	ϑ ^ϑ Zone3	ϑ ^ϑ Zone2	ϑ ^ϑ Zone1	ϑ ^ϑ Feed	ϑ ^ϑ Hopper
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.

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General Disclaimer

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values.

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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We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed (+49 (0) 69 30516299 for Europe and +1 859-372-3244 for the Americas) for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.

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