Celanese
The chemistry inside innovation™

OMNITECH® PBT FR GF30

OMNITECH® PBT FR GF30 is a non-exuding flame retarded, 30% fiberglass reinforced polybutylene terephthalate which has an excellent balance of mechanical properties and processability.

Rheological properties

Moulding shrinkage range, parallel	0.2	%	ISO 294-4, 2577
Moulding shrinkage range, normal	1.1	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	11200	MPa	ISO 527-1/-2
Stress at break, 5mm/min	125	MPa	ISO 527-1/-2
Strain at break, 5mm/min	2	%	ISO 527-1/-2
Flexural Modulus	11000	MPa	ISO 178
Flexural Strength	220	MPa	ISO 178
Charpy impact strength, 23°C	36	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	8	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	7	kJ/m²	ISO 180/1A
Hardness, Rockwell, R-scale	118		ISO 2039-2
Shore D hardness, 15s	81		ISO 48-4 / ISO 868
Shore D hardness	81		ASTM D 2240

Thermal properties

Temp. of deflection under load, 1.8 MPa	203	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	219	°C	ISO 75-1/-2

Flammability

Burning Behav. at thickness h	V-0	class	UL 94
Thickness tested	1.50	mm	UL 94
UL recognition	yes		UL 94
Burning Behav. 5V at thickness h	5VA	class	UL 94
Thickness tested	2.5	mm	UL 94
UL recognition	yes		UL 94

Other properties

Humidity absorption, 2mm	<0.2	%	Sim. to ISO 62
Density	1600	kg/m³	ISO 1183

Injection

Drying Temperature	115	°C
Drying Time, Dehumidified Dryer	3 - 4	h
Processing Moisture Content	0.02	%
Max. mould temperature	65 - 93	°C
Injection speed	medium-fast	

OMNITECH® PBT FR GF30

Characteristics

Additives	Flame retardant

Additional information

Injection molding	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.

Processing Texts

Pre-drying	To avoid hydrolytic degradation during processing, PBT resins have to be dried to a moisture level equal to or less than 0.02%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-40°F (-40°C) at 240°F (115°C) for 3-4 hours.
Longer pre-drying times/storage	For subsequent storage of the material in the dryer until processed (<= 60 h) it is necessary to lower the temperature to 100° C.
Injection molding	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.
Injection molding Preprocessing	To avoid hydrolytic degradation during processing, PBT resins have to be dried to a moisture level equal to or less than 0.02%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-30°F (-34°C) at 240°F (115°C) for 3-4 hours..