Celanese
The chemistry inside innovation™

CELANEX® XFR 6842 GF10

Halogen-free, nom. 10% glass-fiber reinforced, flame retardant (UL94 V-0 @0.4mm) grade
Celanex XFR 6842 GF10 is a halogen and antimony free flame retardant (V-0 @ 0.4 mm) 10% glass reinforced PBT grade with good processability and no corrosive emissions during processing. It is suitable for parts requiring enhanced tracking resistance, toughness, and flame retardancy at < 0.75 mm wall thickness. The product is WEEE and RoHS compliant.

Product information

Part Marking Code	> PBT-GF9 FR(30+40) <	ISO 11469

Rheological properties

Melt volume-flow rate	10	cm^3/10min	ISO 1133
Temperature	250	°C	
Load	2.16	kg	
Moulding shrinkage range, parallel	1.1 - 1.3	%	ISO 294-4, 2577
Moulding shrinkage range, normal	1.0 - 1.2	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	5300	MPa	ISO 527-1/-2
Stress at break, 5mm/min	70	MPa	ISO 527-1/-2
Strain at break, 5mm/min	3.4	%	ISO 527-1/-2
Charpy impact strength, 23°C	30	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	4.2	kJ/m^2	ISO 179/1eA
Izod notched impact strength, 23°C	4.5	kJ/m^2	ISO 180/1A
Hardness, Rockwell, M-scale	81		ISO 2039-2

Thermal properties

Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	173	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h, 50N	205	°C	ISO 306

Flammability

Burning Behav. at thickness h	V-0	class	UL 94
Thickness tested	0.40	mm	UL 94

Electrical properties

Relative permittivity, 1MHz	2.9		IEC 62631-2-1
Dissipation factor, 1MHz	140	E-4	IEC 62631-2-1
Volume resistivity	3E14	Ohm.m	IEC 62631-3-1
Surface resistivity	3E15	Ohm	IEC 62631-3-2
Comparative tracking index	PLC 1	PLC	UL 746A

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Other properties

Density	1400 kg/m³	ISO 1183

Injection

Melt Temperature Optimum	258 °C	Internal

Characteristics

Additives	Flame retardant

Additional information

Injection molding

Melt Temperature. 250-265 °C
Mold Temperature *): 75-90 °C
Maximum Barrel Residence Time **): 5-10 min
Injection Speed: high
Peripheral screw speed: max.0,25 m/sec
Back Pressure: 10-30 bar
Injection Pressure: 600-1000 bar
Holding Pressure: 400-800 bar

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. For grades containing flame retardants, a maximum temperature of 265 °C should not be exceeded.

Ticona recommends only externally heated hot runner systems.

*) For moulded parts with especially high requirements to the surface quality or dimensional stability, a mold temperature of up to 100 °C can be advantageous.

**) If the cylinder temperatures are higher than the recommended maximum temperatures, the max. residence time in the barrel has to be reduced.

Processing Texts

Pre-drying

To avoid hydrolytic degradation during processing, CELANEX 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 250-285°F (120 - 140°C) for 6 - 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.

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