INSPIRE™ DLGF 9631.01 Z

Homopolymer Resin

Trinseo

Message:

DLGF 9631.01 Z is based on polypropylene homopolymer and reinforced with 60% by weight of long glass fibers. (PP-LGF60, Long Glassfiber Granulate).
DLGF 9631.01 Z is produced by pultrusion / meltimpregnation process, thereby ensuring thorough impregnation of all the filaments in the glassfiber-rovings and also providing improved ‘pellet robustness' for air conveying.
It is available in ‘standard black' colour (TR 7701862).
This PP-LGF60 is a ‘concentrate' which has to be diluted - usually with ‘neat'-PP but also mineral-filled PP-based compounds can be used. The ‘dilution' is typically done as a dry-blend of granulates by means of gravimetric dosing devices at the injection-molding machine.
A weight ratio of 1 : 1 of DLGF 9631.01 Z and i.e. LGF 8100 PP-copolymer will result in a composite-material-system having 30% by weight of glassfibers. The ‘long' glass fibers (initial length = 11 mm) provide high stiffness, strength and impact-resistance to the injection molded parts.
DLGF 9631.01 Z has been especially formulated to meet the requirements for use in automotive ‘under-the-hood' (UTH) and ‘under-body' applications i.e. front-end carriers (FEC) aka ‘bolster', impingement shields or structural parts like i.e. battery trays or spare wheel wells.
The long term heat ageing resistance (LTHA) has been increased to a high level as needed for ‘UTH' applications. Injection molded parts based on DLGF 9631.01 Z diluted with ‘neat'-PP to 30% GF-content will show no signs of degradation and surpass the limit of > 1000 h @ 150°C.
When diluted to 40% GF-content, the heat aging performance of composites based on DLGF 9631.01 Z will increase beyond the 1000 h. In many cases, even a dilution to 20% will result passing beyond 1000 h @ 150°C, however this will depend on the wall-thickness of molded parts as well as the choice of dilution resin and therefore, it is recommended to conduct own tests.
For large size molded parts, the PP-types chosen for dilution typically have MFI values in the range of 40 - 80 (g/10min @ 230°C) and for most applications the choice of impact-copolymers like LGF 8000 or LGF 8100 (European grades) and LGF 8600 or LGF 8500 (‘corresponding' North American grades) represents the best property balance. For smaller parts / shorter flow-paths, the dilution can also be done with PP-types having MFI in the range of 10 - 20 for increased low temperature impact performance. To meet certain application-specific requirements the polymer-type for dilution could also be homopolymer PP (LGF 7000, LGF 7600) as well as mineral-filled/compounded PP-grades. Eventually, a third component (i.e. talcum-masterbatch, DTFC AP.71) can be added to control shrinkage and warpage, thereby increasing the available options for optimization of the material-system.
Note: The properties shown below have been measured on standardized ‘dogbone'-shape specimens (ISO 3167). However, the mechanical properties which will be present in ‘real' injection-molded parts may be different - depending on the glassfiber-orientation and the fiber-length distribution profile - which themselves are resulting from processing parameters and hardware configuration (such as i.e. the type of screw and mixing elements, back-pressure during dosing cycle, diameter and radii of nozzle and hot-runners, number and size of gates, speed of injection during mold filling and flow-path and flow-length within the mold).

General Information			
Filler / Reinforcement	Long glass fiber, 60% filler by weight		
Features	Rigidity, high High strength Good heat aging resistance Low temperature impact resistance		
Uses	Components Application in Automobile Field		
Appearance	Black		
Forms	Particle		
Processing Method	Injection molding		
Physical	**Nominal Value**	**Unit**	**Test Method**
Density	1.12	g/cm³	ISO 1183
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	6500	MPa	ISO 527-2/5

Tensile Stress (Break)	105	MPa	ISO 527-2/50
Tensile Strain (Break)	2.3	%	ISO 527-2/50
Flexural Modulus [1]	6500	MPa	ISO 178
Flexural Stress [2]	155	MPa	ISO 178
Fracture bending strain-outer 'fiber' strain	2.9	%	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Unnotched Impact Strength			
23°C	53	kJ/m^2	ISO 179/1eU
23°C	45	kJ/m^2	ISO 179/1fU
Notched Izod Impact			
23°C	230	J/m	ASTM D256
23°C	17	kJ/m^2	ISO 180
Multi-Axial Instrumented Impact Energy (23°C, 4.00mm, energy to peak strength)	19.0	J	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force (23°C, 4.00 mm)	3300	N	ISO 6603-2
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Unannealed)	155	°C	ASTM D648, ISO 75-2/A

Additional Information

These are typical properties as measured on injection molded specimens ('dogbones') defined by ISO 3167 type 1a (L= 175 mm, center-section: 80x10x4 mm).
Dilution Material: LGF 8100
Dilution Ratio: 1 : 1 blend
Glass Fiber Content After Dilution: 30%

NOTE

1.	3-Point Bending
2.	3-Point Bending

Recommended distributors for this material

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