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XILOY™ SG160

Technical datasheet
Version number 02
2018

XILOY™ SG160 is a 30% glass-filled polypropylene/ styrene maleic anhydride (PP/SMA) based injection molding compound with:

- high thermal stability
- high dimensional stability
- high stiffness

Application areas

XILOY™ SG160 is a 30% glass filled injection molding compound designed for applications with high stiffness-strength. This product is very suitable for parts requiring both high temperature resistance and low mold shrinkage and warpage.

Product properties

XILOY™ SG160 has processing parameters which are comparable to those of glass filled polypropylene, so it can be processed on conventional types of injection molding machines. XILOY™ SG160 can be moulded in most conventional runner systems. When using small pin gates or hot runner systems, special attention is required to prevent overheating of the melt during the injection cycle. Speed of injection and melt temperature must be controlled.

The mould can be constructed in aluminium for low production numbers, up to standard P-20 or high quality 420 stainless steel, which is suitable for a wide range of thermoplastic materials in series production.

Product use

An important processing parameter for XILOY™ SG160 is melt temperature. Should this temperature be higher than 270 °C, rotational speed, injection speed and back pressure have to be regulated so that the build-up of frictional heat in the melt is minimised during both plasticising and injection.

It is important to select the correct machine size when processing XILOY™ SG160. An unbalanced ratio of shot weight to cylinder volume leads to a long residence time of the melt at higher temperatures and thus should be avoided.

If production is delayed longer than 30 minutes, the barrel temperature should be reduced by 50 °C while the machine is not in use. At the restart of the machine the barrel should be emptied first before new plastification.

Storage and handling

The granules ensure easy, dust free handling and can be added to the compounding extruder through regular feeder systems.

Health and safety

All health related risks are mentioned in the Safety Data Sheet (SDS). Please contact: productstewardship@polyscope.eu to receive the SDS.

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Mechanical properties

	Unit	Typical value	Test method
Impact properties			
Charpy notched impact strength (23°C)	kJ/m^2	9	ISO 179/1eA
Charpy notched impact strength (-40°C)	kJ/m^2	8	ISO 179/1eA
Charpy unnotched impact strength (23°C)	kJ/m^2	36	ISO 179/1eU
Charpy unnotched impact strength (-40°C)	kJ/m^2	36	ISO 179/1eU
Izod notched impact strength (23°C)	kJ/m^2	9	ISO 180/A
Izod notched impact strength (-40°C)	kJ/m^2	8	ISO 180/A
Tensile properties			
Tensile stress at break	N/mm^2	75	ISO 527-2
Elongation at break	%	2.5	ISO 527-2
E-modulus	N/mm^2	6900	ISO 527-2
Flexural properties			
Flexural strength	N/mm^2	125	ISO 178
Flexural modulus	N/mm^2	7300	ISO 178

Thermal properties

	Unit	Typical value	Test method
Flammability properties	--	HB	UL 94
Heat deflection temperature (un annealed)			
A at 1.80 MPa	°C	145	ISO 75

Specific properties

	Unit	Typical value	Test method
Density	g/cm^3	1.17	ISO 1183
Melt flow index at 220°C and 100N	dg/min	8	ISO 1133
Spiral flow length [1]	cm	47	Internal
Linear thermal expansion [2]			
In flow direction	mm/°C (•10^4)	0.38	ASTM D696
Perpendicular to flow	mm/°C (•10^4)	0.56	ASTM D696
Water absorption [3]	%	0.2	ISO 62
Mold shrinkage [4]			
In flow direction	%	0.33	AMPL
Perpendicular to flow	%	0.72	AMPL
Glass fiber content	%	30	internal

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Processing

	Unit	Value
Pre drying temperature	°C	80-90
Pre drying time	hrs	2-3
Barrel temperature	°C	230 - 265
Hot runner	°C	230 - 265
Maximum processing temperature	°C	270
Mold surface temperature	°C	40-80
Injection speed	kg/sec	0,5 -1,0
Max. screw surface speed	m/sec	0,9
Back pressure	bar (spec.)	100 -150
Holding pressure	% from inject. pressure	50 - 95

Notes

1. Measured on Polyscope SSL mould. Thickness 2mm. p_{inj}= 70 bar, T_{inj} =250 °C, v_{inj} =max, T_{mould}=65 °C
2. Coefficient of linear thermal expansion, measured from -30 to +80 °C, after 3rd heating cycle
3. Measured at +23 °C and 50 % relative humidity
4. Measured according to the Autodesk Mold flow Plastics Labs using a tag mold. Reported values averaged over a set of different processing conditions. Exact shrinkage should be confirmed by the user in the actual part.

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