Zytel® 79G13HSL BK039

NYLON RESIN

Common features of Zytel® nylon resin include mechanical and physical properties such as high mechanical strength, excellent balance of stiffness and toughness, good high temperature performance, good electrical and flammability properties, good abrasion and chemical resistance. In addition, Zytel® nylon resins are available in different modified and reinforced grades to create a wide range of products with tailored properties for specific processes and end-uses. Zytel® nylon resin, including most flame retardant grades, offer the ability to be coloured.

The good melt stability of Zytel® nylon resin normally enables the recycling of properly handled production waste. If recycling is not possible, DuPont recommends, as the preferred option, incineration with energy recovery (-31kJ/g of base polymer) in appropriately equipped installations. For disposal, local regulations have to be observed.

Zytel® nylon resin typically is used in demanding applications in the automotive, furniture, domestic appliances, sporting goods and construction industry.

Zytel® 79G13HSL BK039 is a 13 % glass reinforced, heat stabilised, lubricated slightly toughened black polyamide 66 for injection moulding. It has improved impact resistance.

Product information

Resin Identification	PA66-IGF13	ISO 1043
Part Marking Code	>PA66-IGF13<	ISO 11469
ISO designation	ISO 16396-PA66-I,GF13,M1CGHR,S18-050	

Rheological properties

	dry/cond.		
Viscosity number	163/*	cm³/g	ISO 307, 1157, 1628
Moulding shrinkage, parallel	0.5/-	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.8/-	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile Modulus	5100/3700	MPa	ISO 527-1/-2
Stress at break	115/67	MPa	ISO 527-1/-2
Strain at break	4/10	%	ISO 527-1/-2
Charpy impact strength, 23°C	67/59	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	59/54	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	8/12	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	6/6	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	7.5/10	kJ/m²	ISO 180/1A
Poisson's ratio	0.35/0.36	-	

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Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	262/*	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	240/*	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	260/*	°C	ISO 75-1/-2
RTI, electrical, 0.75mm	105	°C	UL 746B
RTI, electrical, 1.5mm	120	°C	UL 746B
RTI, electrical, 3mm	120	°C	UL 746B
RTI, impact, 0.75mm	65	°C	UL 746B
RTI, impact, 1.5mm	105	°C	UL 746B
RTI, impact, 3mm	105	°C	UL 746B
RTI, strength, 0.75mm	105	°C	UL 746B
RTI, strength, 1.5mm	120/*	°C	UL 746B
RTI, strength, 3mm	120	°C	UL 746B

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	HB/*	class	IEC 60695-11-10
Thickness tested	1.5/*	mm	IEC 60695-11-10
UL recognition	yes/*	-	UL 94
Burning Behav. at thickness h	HB/*	class	IEC 60695-11-10
Thickness tested	0.8/*	mm	IEC 60695-11-10
UL recognition	yes/*	-	UL 94
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	24	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Volume resistivity	>1E13/1E10	Ohm.m	IEC 62631-3-1
Surface resistivity	*/1E12	Ohm	IEC 62631-3-2

Other properties

	dry/cond.		
Density	1210/-	kg/m³	ISO 1183

VDA Properties

	dry/cond.		
Emission of organic compounds	13	µgC/g	VDA 277
Odour	4	class	VDA 270
Fogging, G-value (condensate)	0.3/*	mg	ISO 6452

Injection

Drying Recommended	yes	
Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	295	°C
Min. melt temperature	285	°C

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Max. melt temperature	305	°C
Max. screw tangential speed	0.2	m/s
Mold Temperature Optimum	80	°C
Min. mould temperature	50	°C
Max. mould temperature	100	°C
Hold pressure range	50 - 100	MPa
Hold pressure time	3	s/mm
Ejection temperature	210	°C