

Technical Data



Material Type	PA12	PU	PU Filled	PA6	PA6 Filled
Trade Name	DuraFormGF	PU23*	PU38GF30*	NM27H*	NM58HGF30
Production Process	SLS	Vacuum Casting	Vacuum Casting	NylonMold PA Casting	NylonMold PA Casting
Features	PA12 powder with 50% glass beads		Short glass fibre reinforced	Heat stabilized	Short glass fibre reinforced

Mechanical Properties

* XX00 MPa Tensile modulus

Measurement	Method/Condition	PA12	PU	PU Filled	PA6	PA6 Filled
Specific Gravity	ISO 1183/ASTM D792	1,49 g/cm ³	1,14 g/cm ³	1,35 g/cm ³	1,14 g/cm ³	1,35 g/cm ³
Tensile Modulus	ISO 527/ASTM D638	4000 MPa	2300 MPa	3800 MPa	2700 MPa	5800 MPa
Tensile Strength	ISO 527-84/ASTM D638	26 MPa	59 MPa	80 MPa	70 MPa	110 MPa
Flexural Modulus	ISO178-93/ASTM D790	3000 MPa	1900 MPa			
Flexural Strength	ISO 178-93/ASTM D790	37 MPa	81 MPa		86 MPa	
Elongation at break	IS=527/ASTM D638	1,40%	10%	3%	17%	3%
Izod notched impact strength at 23 °C	ISO 180/1A				6 kJ/m ²	
Charpy impact strength	ISO 179/1D-94		60 KJ/m ²			
Impact strength (notched)	ASTM D256	41 J/m				
Hardness, Shore D	ISO 868-85/ASTM D2240	77	80	86	79	86

Thermal properties

Measurement	Method/Condition	PA12	PU	PU Filled	PA6	PA6 Filled
Thermal conductivity	DIN 52 612/ASTM E1225	0,47 W/K m			0,28 W/K m	
Linear thermal expansion	ISO 11359	82x10 ⁻⁶ /K	64x10 ⁻⁶ /K		80x10 ⁻⁶ /K	
Melting temp. or glass transition temp.	ISO 11357		> 120 °C	> 120 °C	220 °C	220 °C
Temp. of deflection under load (1,8 MPa)	ISO 75 HDT/A (1,8 MPa)				105 °C	
Temp. of deflection under load (0,45 MPa)	ISO 75 HDT/A (0,45 MPa)				195 °C	
Short time use temperature					180 °C	
Continuous use temperature					115 °C	
Minimal use temperature					-40°C	

Managed Programs, LLC, 1880 Star Batt Drive, Rochester Hills, MI 48309

Phone (248)852-6100, Fax (248)852-6102

www.nylonmoldusa.com

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Electrical properties

* XX00 MPa Tensile modulus

Measurement	Method/Condition	PA12	PU	PU Filled	PA6	PA6 Filled
Relative permittivity at 1 MHz	IEC 60250				3,7	
Dissipation factor at 1 MHz	IEC 60250				300	
Electric strength	IEC 60243-1				100 kV/mm	
Thickness for electric strength					0,6 mm	
Volume resistivity	IEC 60093				10 ¹³ Ohm m	
Surface resistivity	IEC 60093				10 ¹² Ohm	
Comparative tracking index	IEC 60112				600	

Other properties

Measurement	Method/Condition	PA12	PU	PU Filled	PA6	PA6 Filled
Water absorption	ISO 62				7%	
Transparency (opaque/translucent/clear)		grey			opaque	
Colouring			black	black	black	black

The figures in this datasheet are guide values. The values are affected by processing conditions, modifications, additives and environmental conditions and they do not release you from the obligation to check the validity and to undertake test on your own. The information given is based on our state of knowledge. The material data sheet is not to be constructed as guaranteeing specific properties and the data can not be used to deduce the suitability for a particular application.