

GEPP Engineering Plastic

Information			Natural OFN				Black HS OFN			
PROPERTY	TEST METHOD	NOTES	METRIC UNITS		IMPERIAL UNITS		METRIC UNITS		IMPERIAL UNITS	
General										
Colour	-		-	Natural or coloured	-	Natural or coloured	-	Black	-	Black
Specific gravity (Density)	ISO 1183:1987	Test Method A	g/cm ³	1.14	lb/inches ³	0.041	g/cm ³	1.15	lb/inches ³	0.041
Moisture Absorption (Equilibrium)	ISO 62:1999	50% RH, 23C	%	-	%	-	%	-	%	-
Moisture Absorption (24 Hours)	ISO 62:1999 (modified)	Immersion, 23C	%	0.3	%	0.3	%	0.3	%	0.3
Water Absorption (Saturation)	ISO 62:1999	Immersion, 23C	%	5.3	%	5.3	%	5.3	%	5.3
Mechanical										
Tensile strength*	ISO 527-1/2:1993	Sample Type 1B, 50mm min ⁻¹	MPa	75	psi	10878	MPa	80	psi	11603
E-modulus**	ISO 527-1/2:1993	Sample Type 1B, 50mm min ⁻¹	MPa	4000	psi	580152	MPa	4000	psi	580152
Elongation at break	ISO 527-1/2:1993	Sample Type 1B, 50mm min ⁻¹	%	>30	%	>30 psi	%	>20	%	>20 psi
Maximum compressive strength*	ISO 604:2002	Sample Type B, 5mm min ⁻¹	MPa	95		13779	MPa	95		13779
Compressive modulus	ISO 604:2002	Sample Type A, 1mm min ⁻¹	MPa	2500	psi	362595	MPa	2600	psi	377099
Flexural strength*	ISO 178:2001	1.5mm min ⁻¹	MPa	100	psi	14504	MPa	105	psi	15229
Flexural modulus of elasticity	ISO 178:2001	1.5mm min ⁻¹	MPa	3100	psi	449618	MPa	3200	psi	464122
Izod Impact strength	ISO 180:2000	Sample Type A (Notched)	KJ/m ²	6	ft.lb/in ²	2.86	KJ/m ²	6	ft.lb/in ²	2.86
Hardness (Shore D)*	ISO 868:2003		Shore D	83	Rockwell R		Shore D	84	Rockwell R	
Coefficient of Friction (Dynamic)		31.4m/min, 1.75MPa	-	0.15		0.15	-	0.15		0.15
Wear Rate		31.4m/min, 1.75MPa	mg/km	0.11			mg/km	0.06		
K-Factor		31.4m/min, 1.75MPa	mm ³ /Nm	1.2 x 10 ⁻⁶	in ³ .min./ft.lb.hr	0.60 x 10 ⁻⁹	mm ³ /Nm	0.70 x 10 ⁻⁶	in ³ .min./ft.lb.hr	0.34 x 10 ⁻⁹
Thermal										
Melting point	ISO 1218		°C	220	°F	428	°C	220	°F	428
Maximum intermittent service temperature	***		°C	+170	°F	+338	°C	+180	°F	+356
Maximum continuous service temperature	***	5000hrs	°C	+110	°F	+230	°C	+120	°F	+248
Minimum intermittent service temperature	***		°C	-100	°F	-148	°C	-100	°F	-148
Minimum continuous service temperature	***		°C	-40	°F	-40	°C	-40	°F	-40
Thermal coefficient of linear expansion****	ISO 11359-2:1999	23°C - 55°C	°C ⁻¹	8 x 10 ⁻⁵	°F ⁻¹	4.44 x 10 ⁻⁵	°C ⁻¹	8 x 10 ⁻⁵	°F ⁻¹	4.44 x 10 ⁻⁵
Flammability	IEC 60695-11-10:2003-08		-	HB	-	HB	-	HB	-	HB
Electrical										
Dielectric constant	IEC 60250:1969-01	1MHz	-	3.7	-	3.7	-	3.7	-	3.7
Dielectric constant (low frequency)		100Hz	-	4	-	4	-	4	-	4
Dielectric strength	IEC 60243-1:1998-01		KV/mm	25	KV/in	635	KV/mm	25	KV/in	635
Volume resistivity	IEC 60093:1980-01		ohms.m	1 x 10 ¹³	ohms.in	3.93 x 10 ¹⁶	ohms.m	1 x 10 ¹³	ohms.in	3.93 x 10 ¹⁴
Surface resistivity ROA	IEC 60093:1980-01		ohms	1 x 10 ¹²	ohms	3 x 10 ¹²	ohms	1 x 10 ¹²	ohms	3 x 10 ¹²
Resistance to tracking	IEC 112		CTI	600	CTI	600	CTI	600	CTI	600
Notes:			OFN (Liquid Oil Lubricant) contains a complex oil lubricant system distributed throughout the product, providing constant performance over the whole service life of the oil-loaded cast nylon. The uniform distribution of the lubricant improves wear resistance, coefficient of friction and stick/slip characteristics, whilst maintaining excellent mechanical, thermal and electrical properties.				HS OFN (Oil + Heat Stability) is a heat stabilised version of OFN cast nylon grade. This dense, highly crystalline material offers improved heat ageing properties, allowing for increased continuous operating temperatures whilst retaining its internal lubrication system. The material is designed for abrasion resistance in applications operating in temperatures above 100°C.			
* Result depends on chemical formulation										
** Results taken using 'LVDT' transducer										
*** Results using hot / cold box consultancy at St Petersburg University (Russia)										
**** Results dependent on ambient temperature										
Typical Applications			Availability:		Metric:		Imperial:		Availability:	
Rollers - Bushes - Gears - Guides - Sheaves - Thrust Washers - Pulleys - Chain Guides - Wear Strips			Rod:		10mm - 500mm Dia		0.375" - 20" Dia		Rod:	
Starwheels - Scrolls - Sprockets - Cams - Spacers - Liners - Mandrels - Seals - Clamps - Shims			Plate:		6mm - 120mm Thick		0.25" - 4.75" Thick		Plate:	
			Tube:		50mm - 1500mm Dia		2" - 59" Dia		Tube:	
			Requested colour:						Requested colour:	
			Green		Natural		Light Green		Black	
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MACHINERY & INDUSTRIAL SUPPLIES SDN BHD (24972-V)

19, Jalan Dua, Off Jalan Chan Sow Lin, 55200 Kuala Lumpur

Tel: +603-92219898 / Fax: +603-92217878 / Email: enquiry@smis.com.my