PE-1000-NAT-BLU-BLK

PSR Plastics
Components to Industry

Trade Name: OKULEN 1000 natural FN0000 / OKULEN 1000 blue FN5100 / OKULEN 1000 black FN9000

DIN EN ISO 1043 designation: PE

Modification: None

Colour: Natural, Blue, Black

Properties	Test Method	Unit		Value
General Properties				
Molecular-weight	k.a	Mio. g/mol.		~ 5.0
Density	DIN EN ISO 1183-1 (04/2013) ASTM D792	g/cm³		> 0.930
Notched impact strength	DIN EN ISO 11542-2 (01/2010)	kJ/m²	Blue	> 140
			Natural	> 170
			Black	> 140
Abrasion-Index (Sand-Slurry)	DIN EN ISO 15527 (05/2013)			100
Tensile strength at yield (1B - 50mm/Min.)	DIN EN ISO 527-2 (06/2012) ASTM D 638 (2010)	N/mm²		> 18
Elongation (Break / 1B - 50mm/Min.)	DIN EN ISO 527-2 (06/2012) ASTM D 638 (2010)	%		> 350
Tensile-E-modulus (1B - 1mm/Min	DIN EN ISO 527-2 (06/2012) ASTM D 638 (2010)	N/mm²		> 650
Static Friction	ASTM D 1894 (2011)			~ 0.15 - 0.20
Dynamic Friction	ASTM D 1894 (2011)			~ 0.10 - 0.15
Shore-D-Hardness, 3 sec. value 6mm plate	DIN EN ISO 868 (10/2003)	D		61 - 65
Ball indentation hardness	DIN EN ISO 2039	N/mm²		~ 35
Water absorbtion	DIN EN ISO 62 (05/2008)	%		< 0.01
Thermal Properties				
Melting Point (DSC)	DIN EN ISO 11357-1 (03/2010)	°C		133 - 135
Thermal conductivity	Wire method	W/m*K		~ 0.41
Max. operation temperature	Literature	°C	Blue	~ 80
			Natural	80
			Black	~ 80
Coefficient of thermal expansion (23 - 80°C)	ISO 11359	mm/mm°C		~ 0.00015 - 0.00020
Electrical Properties				
Volume resistivity	DIN EN 62631-3-1 (01/2017)	Ohm*cm	Blue	> 1E14
			Natural	> 1.0E14
			Black	< 1.0E14
Surface resistivity	DIN EN 62631-3-2 (01/2016)	Ohm	Blue	> 1E13
			Natural	> 1.0E13
			Black	< 1.0E14
ATEX-Directive - TÜV approved	ATEX-Directive			---
ESD-D	-			--- Ohm
Burning Properties				
Fire resistance (Self-classification)	DIN 4102	Class		B2 Class
Fire resistance (Self-classification)	UL94	Class		HB Class
Physiological Properties				
Food compliant				EU/FDA

Application Examples Conveyor Guides, Chute Liners, Food Processing Parts, Medical Equipment, Packaging Applications, Wear Strips.
Remarks Under the influence of moisture absorption, the mechanical properties change. The material becomes tougher and more resistant to impact, the modulus of elasticity declines. Depending on the environmental atmosphere, the temperature and the period of moisture absorption, only the surface layer is affected by alterations of property to a certain depth. On thick-walled parts, the center area remains unaffected. The short-term maximum application temperature only applies to very low mechanical stress for a few hours. The long-term maximum application temperature is based on the thermal ageing of plastics by oxidation, resulting in a decrease of the mechanical properties. This applies to an exposure to temperatures for at least 5.000 hours causing a 50% loss of the tensile strength from the original value (measured at room temperature). This value says nothing about the mechanical strength of the material at high application temperatures. In case of thick-walled parts, only the surface layer is affected by oxidation from high temperatures. With the addition of antioxidants, a better protection of the surface layer is achieved. In any case, the center area of the material remains unaffected. The minimum application temperature is basically influenced by possible stress factors like impact and/or shock under application. The values stated refer to an minimum degree of impact stress. The electrical properties as stated result from measurements on natural, dry material. With other colors (in particular black) or saturated material, there may be clear differences in the electrical properties. The values indicated result from numerous individual measurements for an approximation of the values and are to our today's knowledge. They serve as information about our products and are presented as a guide to choose from our range of materials. This, however, does not include an assurance of specific properties or the suitability for particular application purposes that are legally binding. Since the properties also depend on the dimension of the semi-finished products and the degree of crystallization (e.g. nucleating by pigments), the actual values of the properties of a particular product may differ from the indicated values. * The mechanical properties of fiber reinforced material were measured on injection molded samples, parallel to fiber direction. Special construction details of further material specifications on request. This table is a valuable help in the choice of a material. The data listed here fall within the normal range of product properties. However, they are not guaranteed and they should not be used to establish material specification limits nor used alone as the basis of design.

PSR Industrial Limited, 19 - 21 Beler Way, Leicester Road Ind. Est., Melton Mowbray, Leicestershire, LE13 0DG
Tel: +44 (0) 1664 56540, Fax: +44 (0) 1664 560030, sales@psrplastics.co.uk, www.psrplastics.co.uk