PE-1000-AST-BLK

PSR Plastics
Components to Industry

Trade Name: OKULEN 1000 AST Black FN9200

DIN EN ISO 1043 designation: PE

Modification: None

Colour: 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	> 0.940
Notched impact strength	DIN EN ISO 11542-2 (01/2010)	kJ/m²	100
Abrasion-Index (Sand-Slurry)	DIN EN ISO 15527 (05/2013)		100 - 110
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)	%	> 150
Tensile-E-modulus (1B - 1mm/Min	DIN EN ISO 527-2 (06/2012) ASTM D 638 (2010)	N/mm²	700
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	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	<= 1.0E4
Surface resistivity	DIN EN 62631-3-2 (01/2016)	Ohm	<= 1.0E4
ATEX-Directive - TÜV approved	ATEX-Directive		Yes
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.

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