

## Quadrant EPP Ertalon® 6 SA PA 6, extruded (ISO Data)

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6, Extruded

### Material Notes:

This material offers an optimal combination of mechanical strength, stiffness, toughness, mechanical damping properties and wear resistance. These properties, together with good electrical insulating properties and a good chemical resistance make Ertalon 6 SA a "general purpose" grade for mechanical construction and maintenance. High mechanical strength, stiffness, hardness and toughness Good fatigue resistance High mechanical damping ability Good sliding properties Excellent wear resistance Good electrical insulating properties Good resistance to high energy radiation (gamma- and X-rays) Good machinability

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Quadrant-EPP-Ertalon-6-SA-PA-6-extruded-ISO-Data.php](http://www.lookpolymers.com/polymer_Quadrant-EPP-Ertalon-6-SA-PA-6-extruded-ISO-Data.php)

Physical Properties	Metric	English	Comments
Density	1.14 g/cc	0.0412 lb/in <sup>3</sup>	ISO 1183-1
Moisture Absorption at Equilibrium	2.6 %	2.6 %	50% RH
Water Absorption at Saturation	9.0 %	9.0 %	
Outgassing - Total Mass Loss	1.3 %	1.3 %	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	85	85	ISO 2039-2
Hardness, Shore D	79	79	
Ball Indentation Hardness	150 MPa	21800 psi	ISO 2039-1
Tensile Strength	80.0 MPa	11600 psi	at Yield; ISO 527-1/-2
Elongation at Break	>= 50 %	>= 50 %	ISO 527-1/-2
Elongation at Yield	4.0 %	4.0 %	ISO 527-1/-2
Tensile Modulus	3.30 GPa	479 ksi	ISO 527-1/-2
Flexural Strength	116 MPa	16800 psi	
Flexural Modulus	3.08 GPa	447 ksi	
Compressive Strength	31.0 MPa	4500 psi	ISO 604
	@Strain 1 %	@Strain 1 %	
	59.0 MPa	8560 psi	ISO 604
	@Strain 2 %	@Strain 2 %	
	87.0 MPa	12600 psi	

Mechanical Properties	Metric @Strain 5 %	English @Strain 5 %	ISO 604 Comments
K Factor (ISO)	19 $\mu\text{m}/\text{km}$	19 $\mu\text{m}/\text{km}$	
Charpy Impact Unnotched	NB	NB	ISO 179-1/1eU
Charpy Impact, Notched	0.550 J/cm <sup>2</sup>	2.62 ft-lb/in <sup>2</sup>	ISO 179-1/1eA
Coefficient of Friction, Dynamic	0.40 - 0.60	0.40 - 0.60	
Limiting Pressure Velocity	0.0700 MPa-m/sec	2000 psi-ft/min	at 1 m/s unlubricated
	0.120 MPa-m/sec	3430 psi-ft/min	at 0.1 m/s unlubricated

Thermal Properties	Metric	English	Comments
CTE, linear	105 $\mu\text{m}/\text{m}\cdot\text{°C}$	58.3 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 23.0 - 100 °C	@Temperature 73.4 - 212 °F	
Thermal Conductivity	0.280 W/m-K	1.94 BTU-in/hr-ft <sup>2</sup> -°F	
Melting Point	220 °C	428 °F	DSC, 10°C/min.; ISO 11357-1/-3
Maximum Service Temperature, Air	70.0 °C	158 °F	Continuous; 20,000 h
	85.0 °C	185 °F	Continuous; 5,000 h
Deflection Temperature at 1.8 MPa (264 psi)	70.0 °C	158 °F	ISO 75-1/-2
Flammability, UL94	HB	HB	
Oxygen Index	25 %	25 %	ISO 4589-1/-2

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.0\text{e}+14$ ohm-cm	$\geq 1.0\text{e}+14$ ohm-cm	IEC 60093
Surface Resistivity per Square	$\geq 1.0\text{e}+13$ ohm	$\geq 1.0\text{e}+13$ ohm	IEC 60093
Dielectric Constant	3.9	3.9	IEC 60250
	@Frequency $\geq 100000$ Hz	@Frequency $\geq 100000$ Hz	
Dielectric Strength	25.0 kV/mm	635 kV/in	
Dissipation Factor	0.019	0.019	IEC 60250
	@Frequency 100000 Hz	@Frequency 100000 Hz	
Comparative Tracking Index	600 V	600 V	IEC 60112

Compliance Properties	Metric	English	Comments
3A-Dairy	No	No	
European Food 1935/2004	Yes	Yes	
FDA	Yes	Yes	only natural
USP Class VI	No	No	

Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Unacceptable	Unacceptable	
Acids, Weak	Limited	Limited	
Alcohols	Limited	Limited	
Alkalies, Strong (pH 11-14)	Unacceptable	Unacceptable	
Alkalies, Weak	Limited	Limited	
Chlorinated Solvents	Limited	Limited	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Limited	Limited	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Acceptable	Acceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Acceptable	Acceptable	

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