

DuPont Elvax® 450 Ethylene-Vinyl Acetate Copolymer Resin

Category : Polymer , Thermoplastic , Ethylene Vinyl Acetate , Ethylene Vinyl Acetate; Molded/Extruded

Material Notes:

Elvax® resins offer a unique combination of processing and performance characteristics. They provide outstanding toughness and resilience and maintain flexibility over a broad temperature range without the need for plasticizers. Elvax® resins can be used alone or to improve the flexibility, resilience and toughness of other resins. Depending on the demands of the particular application, they can be pigmented, foamed, filled, and/or crosslinked. In addition to their performance advantages, Elvax® resins are processed easily using conventional thermoplastic processing techniques, i.e., injection molding, extrusion and foaming, as well as rubber processing techniques, i.e., Banbury mixing, foam extrusion and molding. Test specimens except for tensile impact where prepared by compression molding (ASTM D1928, procedure C). Tensile impact samples were injection molded. Processing Information: Molding and Extruding Modified and unmodified Elvax® resins can be processed in conventional thermoplastic and rubber processing equipment. The temperature profile will vary with machine type, size and screw design as well as with part size, thickness or configuration. Compounding Elvax® resins are compatible with a variety of other resins and elastomers including polyethylene, polypropylene and styrene-butadiene rubber. Clays and other inorganic fillers can be added to improve abrasion resistance and lower cost. Foaming Agents Elvax® resins are readily foamed using chemical or physical blowing agents. Crosslinking Agents Peroxides such as "Di-Cup"† and "Vul-Cup"† dicumyl peroxide can be used to crosslink or vulcanize Elvax® resins. (†Hercules Inc.) Information provided by DuPont.

Order this product through the following link:

http://www.lookpolymers.com/polymer_DuPont-Elvax-450-Ethylene-Vinyl-Acetate-Copolymer-Resin.php

Physical Properties	Metric	English	Comments
Density	0.941 g/cc	0.0340 lb/in ³	ASTM D792
Vinyl Acetate Content	18 %	18 %	TGA
Melt Index of Compound	8.0 g/10 min	8.0 g/10 min	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	88	88	ASTM D2240
Hardness, Shore D	38	38	ASTM D2240
Tensile Strength, Ultimate	15.0 MPa	2180 psi	Type IV, crosshead speed 2 in/min; ASTM D638
	5.50 MPa @Temperature 49.0 °C	798 psi @Temperature 120 °F	Type IV, crosshead speed 2 in/min; ASTM D638
	28.0 MPa @Temperature -20.0 °C	4060 psi @Temperature -4.00 °F	Type IV, crosshead speed 2 in/min, at -20°C; ASTM D638
Elongation at Break	800 %	800 %	Type IV, crosshead speed 2 in/min; ASTM D638
	450 %	450 %	Type IV, crosshead speed 2 in/min, at

Mechanical Properties	Metric @ Temperature -20.0 °C	English @ Temperature -4.00 °F	-20 °C; ASTM D638 Comments
	750 % @Temperature 49.0 °C	750 % @Temperature 120 °F	Type IV, crosshead speed 2 in/min; ASTM D638
Modulus of Elasticity	0.0370 GPa @Temperature -20.0 °C	5.37 ksi @Temperature -4.00 °F	
	0.159 GPa @Temperature -20.0 °C	23.1 ksi @Temperature -4.00 °F	
Flexural Modulus	0.0400 GPa	5.80 ksi	ASTM D790
	0.0180 GPa @Temperature 49.0 °C	2.61 ksi @Temperature 120 °F	ASTM D790
	0.197 GPa @Temperature -20.0 °C	28.6 ksi @Temperature -4.00 °F	ASTM D790
Flexural Stiffness	37.00 MPa	5366 psi	
	159.0 MPa @Temperature -20.0 °C	23060 psi @Temperature -4.00 °F	
Tensile Impact Strength	455 kJ/m²	217 ft-lb/in²	At -20°C; ASTM D1822
	525 kJ/m²	250 ft-lb/in²	At 23°C; ASTM D1822
Compression Set	49 %	49 %	Method B, 10 days at 25°C; ASTM D395
	90 % @Temperature 70.0 °C	90 % @Temperature 158 °F	Method B, 22 hours; ASTM D395

Thermal Properties	Metric	English	Comments
Vicat Softening Point	61.0 °C	142 °F	ASTM D1525
Brittleness Temperature	<= -100 °C	<= -148 °F	ASTM D762

Processing Properties	Metric	English	Comments
Processing Temperature	121 - 204 °C	250 - 399 °F	

Descriptive Properties	Value	Comments
Cycle time	0.5-2 minutes	Molding, equipment and part design dependent
Vinyl Acetate Content	18 wt. %	

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