

AVALON® 90 AB

Thermoplastic Polyurethane Elastomer (Polyester)

Huntsman Corporation

Message:

AVALON® 90AB is a high performance polyester based thermoplastic polyurethane for injection molding.

All AVALON® B grades are recommended in applications requiring:

Excellent physical properties

Good hydrolytic stability

Oil, fuel and grease resistance

Good processing characteristics

Abrasion Resistance

Low temperature flexibility

AVALON® 90AB grade is used in specialty footwear applications such as sports soles.

General Information			
Features	Flexibility at low temperatures		
	Workability, good		
	Good wear resistance		
	Fuel resistance		
	Oil resistance		
	Grease resistance		
	Hydrolysis stability		
Uses	Sporting goods		
	Footwear		
Forms	Particle		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.22	g/cm³	ASTM D792, ISO 2781
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ISO 868
Shaw A	90		ISO 868
Shaw D	44		ISO 868
Mechanical	Nominal Value	Unit	Test Method
Taber Abrasion Resistance (H-18 runner)	75.0	mg	ASTM D1044
Ross Flex (-10°C)	2.5E+5	Cycles	BS 5131
Rebound Resilience	45	%	ISO 4662
Tensile strength retention-21 days (80°C)	> 90	%	ISO 37
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			ISO 37
100% strain	8.00	MPa	ISO 37
300% strain	16.0	MPa	ISO 37

Tensile Stress (Break)	37.0	MPa	ISO 37
Tensile Elongation (Break)	530	%	ISO 37
Tear Strength ¹	120	kN/m	ISO 34-1
Injection	Nominal Value	Unit	
Drying Temperature - Desiccant Dryer	80 - 90	°C	
Drying Time - Desiccant Dryer	2.0	hr	
Hopper Temperature	25 - 35	°C	
Rear Temperature	195 - 205	°C	
Middle Temperature	200 - 210	°C	
Front Temperature	205 - 215	°C	
Nozzle Temperature	200 - 210	°C	
Mold Temperature	25 - 50	°C	
Injection Pressure	2.00 - 10.0	MPa	
Injection Rate	Slow		
Holding Pressure	1.00 - 5.00	MPa	
Back Pressure	0.0300 - 0.300	MPa	
Screw Speed	20 - 80	rpm	
Screw L/D Ratio	20.0:1.0 to 25.0:1.0		
Screw Compression Ratio	2.0 : 1.0 - 3.0 : 1.0		

Injection instructions

Typical Screw Diameter : 40 - 120 mm3 Stage Design

Feed Zone : 0.4 x L

Compression Zone : 0.3 x L

Metering Zone : 0.3 x L

NOTE

- Method B, right-angle specimen
(without cut)

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