

IROGRAN® A 60 E 4902

Thermoplastic Polyurethane Elastomer (Polyester)

Huntsman Corporation

Message:

IROGRAN A 60 E 4902 is a soft, high performance polyester based thermoplastic polyurethane intended for extrusion and moulding applications. IROGRANA 60 E 4902 is part of the HUNTSMAN Film and Sheet and Injection-Moulding product ranges. It is processable at low temperatures and offers a specially designed, flexible material suitable for elastic films & mouldings.

PERFORMANCE FEATURES

- Excellent elasticity
- Excellent wear performance
- Good low temperature flexibility
- Enhanced Hydrolytic Stability
- Enhanced UV stability
- Low temperature processability

General Information			
Features	Good Flexibility		
	Good Processability		
	Good UV Resistance		
	Good Wear Resistance		
	High Elasticity		
	Hydrolytically Stable		
	Low Temperature Flexibility		
	Soft		
Uses	Film		
	Sheet		
Forms	Pellets		
Processing Method	Film Extrusion		
	Injection Molding		
	Sheet Extrusion		
Physical	Nominal Value	Unit	Test Method
Specific Gravity ¹	1.14	g/cm ³	ASTM D792, DIN 53478
Melt Volume-Flow Rate (MVR) (160°C/8.7 kg)	35.0	cm ³ /10min	
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			
Shore A, Injection Molded	56		ASTM D2240
Shore D, Injection Molded	15		ASTM D2240, DIN 53505
Shore A, Injection Molded	55		DIN 53505
Mechanical	Nominal Value	Unit	Test Method

Abrasion ²			
--	43	mm ³	DIN 53516
--	43	mm ³	ASTM D395
TMA ³			Internal Method
High : 635.0 µm	145	°C	
Low : 635.0 µm	110	°C	
Elastomers	Nominal Value	Unit	Test Method
Tensile Set ⁴ (200% Strain)	8	%	ASTM D412, DIN 53504
Tensile Stress ⁵			
100% Strain, 0.635 mm	2.34	MPa	ASTM D412
100% Strain, 0.635 mm	1.40	MPa	DIN 53504
300% Strain, 0.635 mm	4.07	MPa	ASTM D412
300% Strain, 0.635 mm	2.40	MPa	DIN 53504
Tensile Strength ⁶			
Break, 0.635 mm	7.52	MPa	ASTM D412
Break, 0.635 mm	10.0	MPa	DIN 53504
Tensile Elongation ⁷			
Break, 0.635 mm	720	%	ASTM D412
Break, 0.635 mm	900	%	DIN 53504
Tear Strength ⁸			
0.635 mm	35.9	kN/m	ASTM D624
0.635 mm	25	kN/m	DIN 53515
Compression Set ⁹			
23°C, 70 hr	40	%	ASTM D395
70°C, 24 hr	80	%	ASTM D395
23°C, 70 hr	35	%	DIN 53517
70°C, 24 hr	60	%	DIN 53517
Bayshore Resilience	60	%	ASTM D2632
Thermal	Nominal Value	Unit	Test Method
Melting Temperature	98.9 to 130	°C	Internal Method
Injection	Nominal Value	Unit	
Drying Temperature - Hot Air Dryer	40.0	°C	
Drying Time - Hot Air Dryer	4.0	hr	
Dew Point	-30.0	°C	
Rear Temperature	160 to 171	°C	
Middle Temperature	160 to 171	°C	
Front Temperature	160 to 171	°C	
Nozzle Temperature	160 to 171	°C	
Extrusion	Nominal Value	Unit	
Drying Temperature	40.0	°C	
Drying Time	4.0	hr	
Cylinder Zone 1 Temp.	160 to 171	°C	

Cylinder Zone 2 Temp.	160 to 171	°C
Cylinder Zone 3 Temp.	160 to 171	°C
Cylinder Zone 4 Temp.	160 to 171	°C
Cylinder Zone 5 Temp.	160 to 171	°C
Adapter Temperature	160 to 171	°C
Die Temperature	160 to 171	°C

NOTE

1.	Injection Molded
2.	Injection Molded
3.	Extruded Film
4.	Extruded Film, 0.025 in
5.	Extruded Film
6.	Extruded Film
7.	Extruded Film
8.	Extruded Film
9.	Injection Molded

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