

IROGRAN® A 95 K 4640

Thermoplastic Polyurethane Elastomer (Polycaprolactone)

Huntsman Corporation

Message:

IROGRAN A95K 4640 is a caprolactone-based thermoplastic polyurethane. The material has been developed for injection molding applications requiring exceptional performance in terms of compression set, wear resistance and hydrolysis resistance over conventional polyester-based TPUs.

IROGRAN A95K 4640 is part of the High Performance Injection Molding product range and offers a specially designed, flexible material suitable for the production of seals, wheels and rollers, coupling halves and o-rings.

PERFORMANCE FEATURES

High wear resistance

Low compression set

Short cycle times

Excellent hydrolysis resistance

Resistant to high dynamic loads

General Information			
Features	Fast Molding Cycle		
	Good Flexibility		
	Good Wear Resistance		
	Hydrolysis Resistant		
	Low Compression Set		
Uses	Gaskets		
	Rollers		
	Seals		
	Wheels		
RoHS Compliance	Contact Manufacturer		
Forms	Granules		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity ¹	1.19	g/cm ³	ASTM D792, DIN 53479
Melt Volume-Flow Rate (MVR) (210°C/2.16 kg)	5.00 to 10.0	cm ³ /10min	
Molding Shrinkage - Flow (Injection Molded)	0.80	%	ASTM D972
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240, DIN 53505
Shore A, Injection Molded	95		
Shore D, Injection Molded	45		
Mechanical	Nominal Value	Unit	Test Method
Tensile Stress - 20% Strain ²	6.69	MPa	ASTM D412
Abrasion ³			
--	29	mm ³	ASTM D395

--	30	mm ³	DIN 53516
Tensile Stress ⁴ (20% Strain)	7.00	MPa	DIN 53504
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress ⁵			
50% Strain	8.62	MPa	ASTM D412
50% Strain	9.00	MPa	DIN 53504
100% Strain	10.8	MPa	ASTM D412
100% Strain	11.5	MPa	DIN 53504
200% Strain	14.0	MPa	ASTM D412
200% Strain	14.2	MPa	DIN 53504
300% Strain	18.9	MPa	ASTM D412
300% Strain	20.4	MPa	DIN 53504
Tensile Strength ⁶			
Break	37.2	MPa	ASTM D412
Break	53.0	MPa	DIN 53504
Tensile Elongation ⁷			
Break	570	%	ASTM D412
Break	530	%	DIN 53504
Tear Strength ⁸			
--	126	kN/m	ASTM D624
--	90	kN/m	DIN 53515
Compression Set ⁹			
23°C, 24 hr	14	%	ASTM D395, DIN 53517
70°C, 24 hr	25	%	ASTM D395
100°C, 24 hr	33	%	ASTM D395
100°C, 70 hr	38	%	ASTM D395, DIN 53517
70°C, 24 hr	23	%	DIN 53517
100°C, 24 hr	25	%	DIN 53517
Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature ¹⁰	165	°C	DIN 53372
Injection	Nominal Value	Unit	
Drying Temperature			
--	100 to 110	°C	
Hot Air Dryer	80.0 to 90.0	°C	
Drying Time			
--	3.0	hr	
Hot Air Dryer	3.0	hr	
Rear Temperature	205	°C	
Middle Temperature	205	°C	
Front Temperature	205	°C	
Nozzle Temperature	200	°C	
Mold Temperature	25.0 to 70.0	°C	

NOTE	
1.	Injection Molded
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