

# IROGRAN® PS440-202

Thermoplastic Polyurethane Elastomer (Polyester)

Huntsman Corporation

Message:

IROGRAN PS440-202 is a high performance polyester based thermoplastic polyurethane intended for extrusion and injection molding applications. IROGRAN PS440-202 is part of the HUNTSMAN film and sheet / technical extrusion product range and offers a specially designed, flexible material with a broad processing window particularly suitable for film and sheet, and textile laminations, polyblends, and industrial articles.

PERFORMANCE FEATURES

- Medium hardness
- Tough
- Good low temperature properties
- High flexibility
- Wide processing window

APPLICATIONS

- Textile lamination
- Polyblends
- Industrial articles

General Information	
Features	Good Flexibility
	Good Toughness
	Low Temperature Resistant
	Medium Hardness
Uses	Blending
	Film
	Industrial Applications
	Laminates
	Sheet
	Textile Applications
Forms	Pellets
Processing Method	Film Extrusion
	Injection Molding
	Sheet Extrusion

Physical	Nominal Value	Unit	Test Method
Specific Gravity <sup>1</sup>	1.21	g/cm³	ASTM D792, DIN 53478
Melt Mass-Flow Rate (MFR) (190°C/21.6 kg)	25	g/10 min	ISO 1133
Molding Shrinkage - Flow	0.40	%	ASTM D955
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore A, Injection Molded)	88		ASTM D2240, DIN 53505
Mechanical	Nominal Value	Unit	Test Method

Abrasion <sup>2</sup>			
--	30	mm <sup>3</sup>	DIN 53516
--	29	mm <sup>3</sup>	
TMA <sup>3</sup>			
High : 635.0 μm	168	°C	Internal Method
Low : 635.0 μm	141	°C	
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress <sup>4</sup>			
100% Strain, 0.635 mm	5.60	MPa	DIN 53504
300% Strain, 0.635 mm	10.0	MPa	
Tensile Stress <sup>5</sup> (Break, 0.635 mm)	48.0	MPa	DIN 53504
Tensile Elongation <sup>6</sup> (Break, 0.635 mm)	650	%	DIN 53504
Tear Strength <sup>7</sup> (0.635 mm)	62	kN/m	DIN 53515
Compression Set <sup>8</sup>			
23°C, 70 hr	30	%	ASTM D395, DIN 53517
70°C, 24 hr	80	%	ASTM D395
70°C, 24 hr	60	%	DIN 53517
Bayshore Resilience	30	%	ASTM D2632
Extrusion	Nominal Value	Unit	
Drying Temperature	45.0 to 55.0	°C	
Drying Time	3.0	hr	
Hopper Temperature	180	°C	
Cylinder Zone 1 Temp.	190	°C	
Cylinder Zone 2 Temp.	190	°C	
Cylinder Zone 3 Temp.	190	°C	
Cylinder Zone 4 Temp.	190	°C	
Cylinder Zone 5 Temp.	190	°C	
Adapter Temperature	190	°C	
Die Temperature	190	°C	
NOTE			
1.	Injection Molded		
2.	Injection Molded		
3.	Extruded Film		
4.	Extruded Film		
5.	Extruded Film		
6.	Extruded Film		
7.	Extruded Film		
8.	Injection Molded		

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## Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

