



## Adflex KS311P

### Advanced Polyolefin

#### Product Description

Adflex KS311P is a reactor TPO (thermoplastic polyolefin) manufactured using LyondellBasell's proprietary *Catalloy* process technology. It is suitable for extrusion as well as injection molding and blow molding applications, including mechanical and decorative automotive parts requiring elastomeric type properties, like molded-in color automotive exterior components. The product is in fact used by our customers for applications with paintable and weatherable requirements, such as injection molded fascias, claddings, bumper covers, body panels, step pads, and air deflectors. It is also used as a component in compounded materials for a wide range of industrial applications.

The grade is available in natural pellet form.

For regulatory compliance information see *Adflex* KS311P Product Stewardship Bulletin (PSB).

#### Product Characteristics

<b>Status</b>	Commercial: Active
<b>Test Method used</b>	ISO
<b>Processing Methods</b>	Extrusion Compounding, Cast Film, Extrusion Blow Molding, Injection Molding
<b>Features</b>	Good Colorability, Good Flexibility, Low Temperature Impact Resistance, Good Moldability , Good Processability, Good Surface Finish
<b>Typical Customer Applications</b>	Cast Film, Exterior Applications, Stationery Film

Typical Properties	Method	Value	Unit
<b>Physical</b>			
Density (Method A)	ISO 1183	0.89	g/cm <sup>3</sup>
Melt flow rate (MFR) (230°C/2.16Kg)	ISO 1133	9.5	g/10 min
<b>Mechanical</b>			
Tear Strength	ASTM D 624	103 N/mm	
<i>Note: (Graves, Die C, 50mm/min) - Load/Width @ Max Load</i>			
Tensile Stress at Break (23 °C, 50 mm/min)	ISO 527-1, -2	19	MPa
Tensile Stress at Yield (23 °C, 50 mm/min)	ISO 527-1, -2	14	MPa
Tensile Strain at Break (23 °C, 50 mm/min)	ISO 527-1, -2	>800	%
Tensile Strain at Yield (23 °C, 50 mm/min)	ISO 527-1, -2	14	%
Flexural modulus (23 °C, 2 mm/min, Chord)	ISO 178	530	MPa
<b>Impact</b>			
Notched izod impact strength	ISO 180		
(23 °C, Type 1, Notch A)		49	kJ/m <sup>2</sup>
<i>Note: Failure Mode: Partial</i>			
(- 40°C, Type 1, Notch A)		4	kJ/m <sup>2</sup>
<i>Note: Failure Mode: Complete</i>			
Multiaxial Impact Strength	ASTM D3763		
(Energy@ Max Load		14	J
+23°C, 2.2m/s, 3.2mm plq; Failure Mode: Ductile)			
(Energy@ Max Load		26	J



-40°C, 6.6m/s, 3.2mm plq; Failure Mode: Ductile)

Hardness

Shore hardness (Shore D)	ISO 868	46
Note: 15 seconds		

Thermal

Melting temperature		147	°C
Note: (ISO 11357-3)			
Heat deflection temperature B (0.45 MPa) Unannealed	ISO 75B-1, -2	55	°C
Vicat softening temperature (A50 (50°C/h 10N))	ISO 306	112	°C

Additional Information

Mold shrinkage	ISO 294-4
Note: Please contact Equistar for shrinkage recommendations	

Additional Properties

AUTOMOTIVE SPECIFICATIONS:  
Chrysler MS-DC243 Type B CPN 3689  
GM GMP.E/P.023

Notes

Typical properties; not to be construed as specifications.

