

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

Status	Commercial: Active
Test Method used	ISO
Availability	North America, Asia-Pacific, Australia/NZ, Africa-Middle East, Latin America
Processing Methods	Extrusion Compounding, Cast Film, Extrusion Blow Molding, Injection Molding
Features	Good Colorability, Good Flexibility, Low Temperature Impact Resistance, Good Moldability, Good Processability, Good Surface Finish
Typical Customer Applications	Cast Film, Exterior Applications, Stationery Film

Typical Properties	Method	Value	Unit
Physical			
Density (Method A)	ISO 1183	0.89	g/cm ³
Melt flow rate (MFR) (230°C/2.16Kg)	ISO 1133	9.5	g/10 min
Mechanical			
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
Impact			
Notched izod impact strength (23 °C, Type 1, Notch A)	ISO 180	49	kJ/m ²
<i>Note: Failure Mode: Partial</i>			
(- 40°C, Type 1, Notch A)		4	kJ/m ²
<i>Note: Failure Mode: Complete</i>			
Multiaxial Impact Strength (Energy@ Max Load +23°C, 2.2m/s, 3.2mm plq; Failure Mode: Ductile)	ASTM D3763	14	J
(Energy@ Max Load)		26	J

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

Hardness

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

Thermal

Melting temperature	147	°C
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Note: (ISO 11357-3)

Heat deflection temperature B (0.45 MPa) Unannealed	ISO 75B-1, -2	55	°C
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Vicat softening temperature (A50 (50°C/h 10N))	ISO 306	112	°C
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Additional Information

Mold shrinkage	ISO 294-4
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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.

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LyondellBasell markets this product through the following entities:

- Equistar Chemicals, LP
- Basell Sales & Marketing Company B.V.
- Basell Asia Pacific Limited
- Basell International Trading FZE
- LyondellBasell Australia Pty Ltd

For the contact details of the LyondellBasell company selling this product in your country, please visit <http://www.lyb.com/>.

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This product(s) may not be used in:

(i) any U.S. FDA Class I, Health Canada Class I, and/or European Union Class I Medical Devices, without prior notification to Seller for each specific product and application; or

(ii) the manufacture of any of the following, without prior written approval by Seller for each specific product and application: (1) U.S. FDA Class II, Health Canada Class II or Class III, and/or European Union Class II Medical Devices; (2) film, overwrap and/or product packaging that is considered a part or component of one of the aforementioned Medical Devices; (3) packaging in direct contact with a pharmaceutical active ingredient and/or dosage form that is intended for inhalation, injection, intravenous, nasal, ophthalmic (eye), digestive, or topical (skin) administration; (4) tobacco related products and applications; (5) electronic cigarettes and similar devices; and (6) pressure pipe or fittings that are considered a part or component of a nuclear reactor.

(iii) Additionally, the product(s) may not be used in: (1) U.S. FDA Class III, Health Canada Class IV, and/or European Class III Medical Devices; (2) applications involving permanent implantation into the body; (3) life-sustaining medical applications; and (4) lead, asbestos or MTBE related applications.

All references to U.S. FDA, Health Canada, and European Union regulations include another country's equivalent regulatory classification.

Users should review the applicable Material Safety Data Sheet before handling the product.

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Release Date: 29 Oct 2014