

# Technical Specification

## ARYAPET – A300

**ARYAPET A300** clear Film specially for labels, photo lamination, FRP etc. **Absolute scratch free film.**

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	15 (60)	19 (76)	23 (92)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	47.6	37.6	31.1	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (29.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100
		TD			100	100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.45
<b>Thermal</b>										
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	1.8	1.8
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	2.5	2.5	2.5	2.5	2.5	2.5	
<b>Barrier</b>										
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day gm/100in <sup>2</sup> /day	ASTM E 96	40 (2.6)	35 2.3	28 (1.8)	22 (1.4)	15 (1.0)	10 (0.6)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day cc/100in <sup>2</sup> /day	ASTM D 3985	100 (6.5)	90 5.8	80 (5.2)	70 (4.5)	50 (3.2)	40 (2.6)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A300

ARYAPET A300 clear Film specially for labels, photo lamination, FRP etc. Absolute scratch free film.

Sr. No.	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	75 (300)	100 (400)	125 (500)	175 (700)	190 (760)	250 (1000)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	9.52	7.14	5.71	4.08	3.76	2.85	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	110	110	120	120	120	120
		TD			100	100	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.40	0.40	0.40	0.40	0.40	0.40
		Dynamic			0.35	0.35	0.35	0.35	0.35	0.35
Thermal										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	1.6	1.6	1.4	1.4	1.2	1.2
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	2.5	2.5	2.5	3.5	3.5	5.0	

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### Storage & Handling

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### Food Contact:

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# Technical Specification

## ARYAPET – A310

**ARYAPET A310 is one- side corona treated Polyester film suitable for Metallising, printing & lamination and has good wettability & excellent machinability.**

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	15 ( 60)	19 ( 72)	23 (92)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	47.6	37.6	32.5	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (29.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100
		TD			100	100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.45
<b>Thermal</b>										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	2.0	2.0
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	2.5	2.5	2.5	2.5	2.5	2.5	
<b>Surface Treatment level</b>										
1	Corona side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	
2	Plain film side	Dynes/cm	ASTM D 2578	42	42	42	42	42	42	
<b>Barrier</b>										
1	W.V.T.R. (38°C& 90% RH)	gm/m <sup>2</sup> /day	ASTM E 96	40	35	28	22	15	10	
		gm/100in <sup>2</sup> /day		2.6	2.3	1.8	1.4	1.0	0.6	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day	ASTM D 3985	100	90	80	70	50	40	
		cc/100in <sup>2</sup> /day		6.5	5.8	5.2	4.5	3.2	2.6	

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### Storage & Handling

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### Food Contact:

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# Technical Specification

## ARYAPET – A311

ARYAPET A311 Optically Clear Film with Antistatic coating and is suitable for Montage application. (One side or both side coating as per requirement)

Sr. No.	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1900 (27.0)
		TD			2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	110	110	120	120	130	110
		TD			100	100	110	110	120	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.35	0.35	0.35	0.35	0.35	0.35
		Dynamic			0.30	0.30	0.30	0.30	0.30	0.30
Thermal										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	2.0	2.0
		TD			1.0	1.0	1.0	1.0	1.0	1.0
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	2.5	2.5	2.5	2.5	3.5	3.5	
2	Light Transmittance	--	ASTM D 1003	89	89	89	89	89	89	
Electrical										
1	Surface Resistivity	Ohm	ASTM D 257	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	

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### Storage & Handling

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# Technical Specification

## ARYAPET – A314

**ARYAPET A314 Clear Film with one side Antistatic coating & other side Anchor coating suitable for aqueous base inks / Resins**

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	110	110	120	120	120	120
		TD			100	100	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.35	0.35	0.35	0.35	0.35	0.35
		Dynamic			0.30	0.30	0.30	0.30	0.30	0.30
<b>Thermal</b>										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	1.6	1.6	1.6	1.6	1.4	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	2.5	2.5	2.5	2.5	3.5	3.5	
2	Light Transmittance	--	ASTM D 1003	89	89	89	89	89	89	
<b>Electrical</b>										
1	Surface Resistivity on antistatic coating side	Ohm	ASTM D 257	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	
<b>Surface treatment level</b>										
1	Anchor coating side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	

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### Storage & Handling

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# Technical Specification

## ARYAPET – A316

**ARYAPET A316** optically clear Film with Antistatic coating on one side & Acrylic coating on the other side. The film is suitable for montage, lay out base, window box, and photocopy applications.

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	110	110	120	120	120	120
		TD			100	100	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.40	0.40	0.40	0.40	0.40	0.40
		Dynamic			0.35	0.35	0.35	0.35	0.35	0.35
<b>Thermal</b>										
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.4	1.4	1.4	1.4	1.4	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	2.5	2.5	2.5	2.5	3.0	3.0	
2	Light Transmittance	--	ASTM D 1003	89	89	89	89	89	89	
<b>Electrical</b>										
1	Surface Resistivity on antistatic coating side	Ohm	ASTM D 257	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	
<b>Surface treatment level</b>										
1	Treated side for Acrylic	Dynes/cm	ASTM D 2578	38	38	38	38	38	38	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

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# Technical Specification

## ARYAPET – A320

**ARYAPET A320** Clear Film with Copolymer coating. The film is suitable for montage, lay out base, window box, and photocopy applications.

(One side or both side coating as per the requirement)

Sr. No	Properties		Unit	Test Method	Typical Values					
<b>General</b>										
1	Thickness		Micron (Gauge)	JBF Method	10 (40)	12 (48)	15 (60)	19 (76)	23 (92)	36 (144)
2	Yield		M <sup>2</sup> /Kg	JBF Method	71.4	59.5	47.6	37.6	31.1	19.8
3	Density		gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (29.8)	2100 (29.8)	2100 (29.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100
		TD			100	100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D1894	0.50	0.50	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.45
<b>Thermal</b>										
1	Shrinkage@ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	2.0	1.8
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point		<sup>o</sup> C	DSC	255	255	255	255	255	255
<b>Optical</b>										
1	Haze		%	ASTM D 1003	2.5	2.5	2.5	2.5	2.5	2.5
<b>Surface Treatment level</b>										
1	Coated side		Dynes/cm	ASTM D 2578	56	56	56	56	56	56
2	Plain film side		Dynes/cm	ASTM D 2578	42	42	42	42	42	42
<b>Barrier</b>										
1	W.V.T.R. (38°C & 90% RH)		gm/m <sup>2</sup> /day gm/100in <sup>2</sup> /day	ASTM E 96	50 (3.2)	40 (2.6)	35 (2.3)	28 (1.8)	22 (1.4)	15 (1.0)
2	O.T.R. (23°C & 0%RH)		cc/m <sup>2</sup> /day cc/100in <sup>2</sup> /day	ASTM D 3985	110 (7.1)	100 (6.5)	90 (5.8)	80 (5.2)	70 (4.5)	50 (3.2)

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### Storage & Handling

ARYA PET need to be stocked In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A320

**ARYAPET A320** Clear Film with Copolymer coating. The film is suitable for montage, Lay out base, window box, and photocopy applications.  
(One side or both side coating as per the requirement)

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	110	110	120	120	130	130
		TD			100	100	110	110	120	120
3	Co-efficient of friction	Static	--	ASTM D 1894	0.40	0.40	0.40	0.40	0.40	0.40
		Dynamic			0.35	0.35	0.35	0.35	0.35	0.35
<b>Thermal</b>										
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.6	1.6	1.4	1.4	1.4	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	2.5	2.5	2.5	2.5	3.5	3.5	
2	Light Transmittance	--	ASTM D 1003	89	89	89	89	89	89	
<b>Surface treatment level</b>										
4	Treated side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	

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### Storage & Handling

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# Technical Specification

## ARYAPET – A322

**ARYAPET A322** optically clear Film with Slip coating is suitable for Solvent base inks The film is suitable for montage, lay out base, window box, and photocopy applications.  
(One side or both side coating as per the requirement)

Sr. No.	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	125	110	110	120	120	120
		TD			100	100	100	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.35	0.35	0.35	0.35	0.35	0.35
		Dynamic			0.30	0.30	0.30	0.30	0.30	0.30
Thermal										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	1.6	1.6	1.4	1.4	1.4	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	2.5	2.5	2.5	2.5	3.5	3.5	
2	Light Transmittance	--	ASTM D 1003	88	88	88	88	88	88	
Surface treatment level										
1	Treated side	Dynes/cm	ASTM D 2578	38	38	38	38	38	38	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

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# Technical Specification

## ARYAPET – A323

**ARYAPET A323** Optically Clear Film with Anchor coating, suitable for Montage, Layout base, Window box, photocopies (One side or both side coating as per requirement)

Sr. No.	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	125	110	110	120	120	120
		TD			100	100	100	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.35	0.35	0.35	0.35	0.35	0.35
		Dynamic			0.30	0.30	0.30	0.30	0.30	0.30
Thermal										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	1.6	1.6	1.4	1.4	1.4	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	2.5	2.5	2.5	2.5	3.5	3.5	
2	Light Transmittance	--	ASTM D 1003	88	88	88	88	88	88	
Surface treatment level										
1	Treated side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

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# Technical Specification

## ARYAPET – A331

**ARYAPET A331 is Acrylic pretreated Polyester film suitable for improved ink adhesion for high quality printing & packaging, solar control and label applications. (One side or both side coating as per the requirement)**

Sr.No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	100	110	110	120	120	120
		TD			100	100	100	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.35	0.35	0.35	0.35	0.35	0.35
		Dynamic			0.30	0.30	0.30	0.30	0.30	0.30
<b>Thermal</b>										
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.6	1.6	1.4	1.4	1.4	1.6
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	2.5	2.5	2.5	2.5	3.5	3.5	
2	Light Transmittance	--	ASTM D 1003	89	89	89	89	89	89	
<b>Surface treatment level</b>										
1	Treated side	Dynes/cm	ASTM D 2578	38	38	38	38	38	38	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

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# Technical Specification

## ARYAPET – A361

ARYAPET A361 Low haze film suitable for photovoltaic application.

Sr. No	Properties	Unit	Test Method	Typical Values			
General							
1	Thickness	Micron (Gauge)	JBF Method	100 400	125 (500)	250 (1000)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	7.14	5.71	2.85	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	
Mechanical							
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi )	ASTM D882	1900 (27.0)	1900 (27.0)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D882	110	120	120
		TD			100	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.40
		Dynamic			0.40	0.40	0.35
Thermal							
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.4	1.2	1.0
		TD			0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	
Optical							
1	Haze	%	ASTM D 1003	6	6	10	
Electrical							
1	Break Down Voltage	KV	ASTM D 149	15	17	22	
2	Surface Resistivity	ohm	ASTM D 257	>10 <sup>12</sup>			
3	Volume Resistivity @ RT	Ohm cm	ASTM D 257	>10 <sup>16</sup>			
4	Dielectric Constant ( 25° C – 60 HZ )	--	ASTM D 150	3.3			
5	Dissipation factor at 60HZ	--	ASTM D 150	0.005			

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

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# Technical Specification

## ARYAPET – A 370

**ARYAPET A370** Clear film suitable for Siliconising, Adhesive tape.

Sr. No.	Properties	Unit	Test Method	Typical Values							
General											
1	Thickness	Micron (Gauge)	JBF Method	12 48	19 (76)	23 92	30 (120)	36 144	50 (200)	75 300	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	37.5	31.1	23.8	19.8	14.3	9.52	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical											
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2100 (29.8)	2000 (28.4)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100	110
		TD			100	100	100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.50	0.45	0.45
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.40	0.40
Thermal											
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.6	1.6	1.6	1.6	1.6	1.4	1.4
		TD			0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Shrinkage @ 190° C/20'	MD	%	ASTM D 1204	3.5	3.5	3.0	3.0	3.0	3.0	3.0
		TD			0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Melting Point	°C	DSC	255	255	255	255	255	255	255	
Optical											
1	Haze	%	ASTM D 1003	2.5	2.5	2.5	2.5	2.5	2.5	3.0	
2	Light Transmittance	--	ASTM D 1003	89	89	89	89	89	89	89	
Surface tension											
1	Both side	Dynes/cm	ASTM D 2578	44	44	44	44	44	44	44	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places.

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A 371

ARYAPET A371 Clear film with one side corona treated suitable for Siliconising, Adhesive tape.

Sr. No.	Properties	Unit	Test Method	Typical Values							
General											
1	Thickness	Micron (Gauge)	JBF Method	12 48	15 (60)	19 (76)	23 92	30 (120)	36 144	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	47.6	37.5	31.1	23.8	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical											
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100	100
		TD			100	100	100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.50	0.50	0.45
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.45	0.40
Thermal											
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.6	1.6	1.6	1.6	1.6	1.6	1.6
		TD			0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Shrinkage @ 190° C/20'	MD	%	ASTM D 1204	3.5	3.5	3.5	3.0	3.0	3.0	3.0
		TD			0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Melting Point	°C	DSC	255	255	255	255	255	255	255	
Optical											
1	Haze	%	ASTM D 1003	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
2	Light Transmittance	--	ASTM D 1003	89	89	89	89	89	89	89	
Surface tension											
1	Corona side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	56	
2	Plain film side	Dynes/cm	ASTM D 2578	42	42	42	42	42	42	42	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places.

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A391

ARYAPET A391 Super Matte film with one side corona treated suitable for label & flexible packaging applications

Sr. No.	Properties	Unit	Test Method	Typical Values		
General						
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	19 (76)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	37.6	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	
Mechanical						
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1800 (25.5)	1800 (25.5)
		TD			1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	100	100
		TD			100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.35	0.35
		Dynamic			0.30	0.30
Thermal						
1	Shrinkage @ 150 <sup>0</sup> C/30'	MD	%	ASTM D	2.0	2.0
		TD			0.4	0.4
2	Melting Point	<sup>0</sup> C	DSC	255	255	
Optical						
1	Haze	%	ASTM D 1003	80	85	
2	Transmittance	%	ASTM D 1003	70	65	
3	Gloss	%	ASTM D 2457	25	25	
Surface Treatment level						
1	Corona side	Dyne/cm	ASTM D 2578	56	56	

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### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A400

ARYAPET A400 is Transparent Polyester film suitable for printing, Metallising, & lamination processes in flexible packaging applications.

Sr. No	Properties	Unit	Test Method	Typical Values					
<b>General</b>									
1	Thickness	Micron (Gauge)	JBF Method	8 (32)	10 (40)	11 (44)	12 (48)	15 (60)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	89.3	71.4	64.9	59.5	47.6	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>									
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (28.8)	2100 (28.8)	2100 (28.8)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100
		TD			100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45
<b>Thermal</b>									
1	Shrinkage @ 150°C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	2.0
		TD			0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	
<b>Optical</b>									
1	Haze	%	ASTM D 1003	3.0	3.5	3.5	3.5	3.5	
<b>Barrier</b>									
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day	ASTM E 96	50	50	40	40	40	
		gm/100in <sup>2</sup> /day		3.2	3.2	2.6	2.6	2.6	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day	ASTM D 3985	110	110	100	100	100	
		cc/100in <sup>2</sup> /day		7.1	7.1	6.5	6.5	6.5	

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### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A400

ARYAPET A400 is Transparent Polyester film suitable for printing, Metallising, & lamination processes in flexible packaging applications.

Sr. No	Properties	Unit	Test Method	Typical Values				
<b>General</b>								
1	Thickness	Micron (Gauge)	JBF Method	19 (76)	23 (92)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	37.5	31.1	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	
<b>Mechanical</b>								
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (29.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100
		TD			100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45
<b>Thermal</b>								
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0	1.8	1.8
		TD			0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	
<b>Optical</b>								
1	Haze	%	ASTM D 1003	4.0	4.0	4.5	5.0	
<b>Barrier</b>								
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	28 (1.8)	22 (1.4)	15 (1.0)	10 (0.6)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	80 (5.2)	70 (4.5)	50 (3.2)	40 (2.6)	

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### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A405

ARYAPET A405 is Transparent Polyester film suitable for Yarn grade application

Sr. No.	Properties	Unit	Test Method	Typical Values					
<b>General</b>									
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	15 (60)	19 (76)	23 (92)	36 (144)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	47.6	37.6	31.1	31.1	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>									
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2200 (31.3)	2200 (31.3)	2100 (29.9)	2100 (29.9)	2000 (28.4)
		TD			2100 (29.9)	2100 (29.9)	2000 (28.4)	2000 (28.4)	2100 (29.8)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100
		TD			100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.5	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45
<b>Thermal</b>									
1	Shrinkage @ 190 <sup>o</sup> C/20'	MD	%	ASTM D 1204	3.5	3.5	3.5	3.5	3.0
		TD			0.0	0.0	0.0	0.0	0.0
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	2.55	
<b>Optical</b>									
1	Haze	%	ASTM D 1003	3.0	3.0	3.0	3.5	4.0	
<b>Barrier</b>									
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	40 (2.6)	32 (2.1)	28 (1.8)	22 (1.4)	15 (1.0)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	100 (6.5)	90 (5.8)	80 (5.2)	70 (4.5)	50 (3.2)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A406

ARYAPET A406 is Transparent Polyester film suitable for Hot Stamping Foil application.

Sr. No.	Properties	Unit	Test Method	Typical Values							
General											
1	Thickness	Micron (Gauge)	JBF Method	10 (40)	12 (48)	15 (60)	19 (76)	23 (92)	25 (100)	36 (144)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	71.4	59.5	47.6	37.6	31.1	28.5	31.1	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical											
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.9)	2100 (29.9)	2100 (29.9)	2000 (28.4)
		TD			2100 (29.9)	2100 (29.9)	2100 (29.9)	2000 (28.4)	2000 (28.4)	2000 (28.4)	2100 (29.8)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100	100
		TD			100	100	100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.5	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.45	0.45
Thermal											
1	Shrinkage @ 190 <sup>o</sup> C/20'	MD	%	ASTM D 1204	4.0	4.0	4.0	4.0	4.0	4.0	3.6
		TD			0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	255	
Optical											
1	Haze	%	ASTM D 1003	3.5	3.5	3.5	3.5	3.5	4.5	4.5	
Barrier											
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	50 (3.2)	40 (2.6)	32 (2.1)	28 (1.8)	22 (1.4)	22 (1.4)	15 (1.0)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	110 (7.1)	100 (6.5)	90 (5.8)	80 (5.2)	70 (4.5)	70 (4.5)	50 (3.2)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A408

**RYAPET A408** is Transparent Polyester film one side high coefficient of friction. It is designed for printing, lamination and big bulk packaging.

Sr. No.	Properties	Unit	Test Method	Typical Values		
<b>General</b>						
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	23 (92)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	31.1	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	
<b>Mechanical</b>						
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi )	ASTM D 882	2100 (28.8)	2100 (28.8)
		TD			2200 (31.3)	2200 (31.3)
2	Elongation at break	MD	%	ASTM D 882	100	100
		TD			100	100
3	Co-efficient of friction (Plain /Plain)	Static	--	ASTM D 1894	0.50	0.50
		Dynamic			0.45	0.45
	Co-efficient of friction (Functional / Functional)	Static			Block	Block
		Dynamic				
<b>Thermal</b>						
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0
		TD			0.4	0.4
2	Melting Point		<sup>o</sup> C	DSC	255	255
<b>Optical</b>						
1	Haze		%	ASTM D 1003	3.5	3.5
<b>Barrier</b>						
1	W.V. T. R. 38 <sup>o</sup> C 90%RH	Gm/m2/day		ASTM E 96	40	22
		Gm/100in2/day			2.6	1.4
2	O.T.R 23 <sup>o</sup> C 0%RH	Cc/m2/day		ASTM D 3985	100	70
		CC/100in2/day			6.5	4.5

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40<sup>o</sup>C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A410

**ARYAPET A410** is one- side corona treated Polyester film suitable for Metallising, printing & lamination and has good wettability & excellent machinability.

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	8 (32)	9 (36)	10 (40)	11 (44)	12 (48)	15 (60)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	89.3	79.4	71.4	64.9	59.5	47.6	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (28.8)	2100 (28.8)	2100 (28.8)	2100 (28.8)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)
2	Elongation at break	MD	%	ASTM D 882	120	120	120	120	120	120
		TD			110	110	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.55	0.55	0.55	0.55	0.55	0.55
		Dynamic			0.50	0.50	0.50	0.50	0.50	0.50
<b>Thermal</b>										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	2.0	2.0
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	3.0	3.0	3.0	3.5	3.5	3.5	
<b>Surface Treatment level</b>										
1	Corona side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	
2	Plain film side	Dynes/cm	ASTM D 2578	42	42	42	42	42	42	
<b>Barrier</b>										
1	W.V.T.R. (38°C& 90% RH)	gm/m <sup>2</sup> /day gm/100in <sup>2</sup> /day	ASTM E 96	50 3.2	50 3.2	50 3.2	40 2.6	40 2.6	35 2.3	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day cc/100in <sup>2</sup> /day	ASTM D 3985	110 7.1	110 7.1	110 7.1	100 6.5	100 6.5	90 5.8	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A410

**ARYAPET A410** is one- side corona treated Polyester film suitable for Metallising, printing & lamination and has good wettability & excellent machinability.

Sr. No.	Properties	Unit	Test Method	Typical Values					
<b>General</b>									
1	Thickness	Micron (Gauge)	JBF Method	19 (72)	23 (92)	30 (120)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	37.6	31.1	23.8	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>									
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (29.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	120	120	120	120	120
		TD			110	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.55	0.55	0.55	0.55	0.55
		Dynamic			0.50	0.50	0.50	0.50	0.50
<b>Thermal</b>									
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	1.8	1.6
		TD			0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	
<b>Optical</b>									
1	Haze	%	ASTM D 1003	3.5	4.0	4.0	4.5	5.0	
<b>Surface Treatment level</b>									
1	Corona side	Dynes/cm	ASTM D 2578	56	56	56	56	56	
2	Plain film side	Dynes/cm	ASTM D 2578	42	42	42	42	42	
<b>Barrier</b>									
1	W.V.T.R. (38°C& 90% RH)	gm/m <sup>2</sup> /day gm/100in <sup>2</sup> /day	ASTM E 96	28 1.8	22 1.4	18 1.2	15 1.0	10 0.6	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	80 5.2	70 4.5	60 3.9	50 3.2	40 2.6	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A411

ARYAPET A411 is Hazy Polyester film with Antistatic coating and is suitable for Montage application. (One side or both side coating as per requirement).

Sr. No.	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	100	110	110	120	130	130
		TD			100	100	100	110	120	120
3	Co-efficient of friction	Static	--	ASTM D 1894	0.40	0.40	0.40	0.40	0.40	0.40
		Dynamic			0.35	0.35	0.35	0.35	0.35	0.35
Thermal										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	1.4	1.4	1.4	1.4	1.4	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	8	9	10	12	15	17	
Surface treatment level										
1	Treated side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	
Electrical										
1	Surface Resistivity	Ohm	ASTM D 257	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

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# Technical Specification

## ARYAPET – A412

**ARYAPET A412 is a one side corona treated & other side Acrylic coated polyester film which promotes better ink & metal adhesion for flexible packaging applications.**

Sr. No.	Properties	Unit	Test Method	Typical Values							
<b>General</b>											
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	15 (60)	19 (76)	23 (92)	36 (144)	50 (200)	75 (300)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	47.6	37.5	31.1	19.8	14.3	9.52	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>											
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	120	120	120	120	120	120	120
		TD			110	110	110	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.45	0.45
<b>Thermal</b>											
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	1.8	1.8	1.6
		TD			0.4	0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	255	
<b>Optical</b>											
1	Haze	%	ASTM D 1003	3.5	3.5	3.5	4.0	4.5	5.0	7.0	
<b>Surface Treatment level</b>											
1	Acrylic Coated	Dynes/cm	ASTM D 2578	40	40	40	40	40	40	40	
2	Corona side	Dynes/cm	ASTM D 2578	52	52	52	52	52	52	52	
<b>Barrier</b>											
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day gm/100in <sup>2</sup> /day	ASTM E 96	40 (2.6)	35 (2.3)	28 (1.8)	22 (1.4)	15 (1.0)	10 (0.6)	08 (0.5)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day cc/100in <sup>2</sup> /day	ASTM D 3985	100 (6.5)	90 (5.8)	80 (5.2)	70 (4.5)	50 (3.2)	40 (2.6)	30 (1.8)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.



# Technical Specification

## ARYAPET – A413

ARYAPET A413 is one- side corona treated & other side Copolymer coated Polyester film is suitable for better metallising, ink adhesion, improved bond strength in flexible packaging applications.

Sr. No.	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	10 (40)	12 (48)	19 (72)	23 (92)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	71.4	59.5	37.6	31.1	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	120	120	120	120	120	120
		TD			110	110	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.45
Thermal										
1	Shrinkage @150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	1.8	1.8
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	3.0	3.5	3.5	4.0	4.5	5.0	
Surface Treatment level										
1	Copolymer Coated	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	
2	Corona treated side	Dynes/cm	ASTM D 2578	52	52	52	52	52	52	
Barrier										
1	W.V.T.R. (38°C& 90% RH)	gm/m <sup>2</sup> /day gm/100in <sup>2</sup> /day	ASTM E 96	50 3.2	40 2.6	28 1.8	22 1.4	15 1.0	10 0.6	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day cc/100in <sup>2</sup> /day	ASTM D 3985	110 7.1	100 6.5	80 5.2	70 4.5	50 3.2	40 2.6	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A415

ARYAPET A415 is a biaxially oriented, co-extruded one side chemically pretreated and other side corona treated Polyester film for flexible packaging application where in it is required to resist Sterilisation in hot water or steam. The pre-treatment provides very good metal adhesion, solvent based printing inks and laminating adhesives.

Sr. No.	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	10 (40)	12 (48)	19 (72)	23 (92)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	71.4	59.5	37.6	31.1	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	120	120	120	120	120	120
		TD			110	110	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.45
Thermal										
1	Shrinkage @150° C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	1.8	1.8
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	3.0	3.5	3.5	4.0	4.5	5.0	
Surface Treatment level										
1	Chemically Treated side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	
2	Corona treated side	Dynes/cm	ASTM D 2578	52	52	52	52	52	52	
Barrier										
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day gm/100in <sup>2</sup> /day	ASTM E 96	50 3.2	40 2.6	28 1.8	22 1.4	15 1.0	10 0.6	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day cc/100in <sup>2</sup> /day	ASTM D 3985	110 7.1	100 6.5	80 5.2	70 4.5	50 3.2	40 2.6	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A417

ARYAPET A417 Hazy Film with one side Antistatic coating & other side Corona Treated film

Sr. No.	Properties	Unit	Test Method	Typical Values							
General											
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	250 (1000)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	2.85	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical											
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	110	110	110	120	120	135	145
		TD			100	100	100	110	110	120	130
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.45	0.45	0.45	0.45	0.45
		Dynamic			0.35	0.35	0.35	0.35	0.35	0.35	0.35
Thermal											
1	Shrinkage @ 150 <sup>0</sup> C/30'	MD	%	ASTM D 1204	1.4	1.4	1.4	1.4	1.4	1.4	1.2
		TD			0.4	0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>0</sup> C	DSC	255	255	255	255	255	255	255	
Optical											
1	Haze	%	ASTM D 1003	8	9	10	12	15	17	22	
Surface Treatment level											
1	Corona side	Dynes/cm	ASTM D 2578	52	52	52	52	52	52	52	
2	Antistatic Side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	56	
Electrical											
1	Surface Resistivity on antistatic side	Ohm	ASTM D 257	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A418

**RYAPET A418 is Transparent Polyester film one side high coefficient of friction other side Corona Treated. It is designed for printing, lamination and big bulk packaging.**

Sr. No.	Properties	Unit	Test Method	Typical Values		
<b>General</b>						
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	23 (92)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	31.1	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	
<b>Mechanical</b>						
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (28.8)
		TD			2200 (31.3)	2200 (31.3)
2	Elongation at break	MD	%	ASTM D 882	120	120
		TD			110	110
3	Co-efficient of friction (Corona / Corona)	Static	--	ASTM D 1894	0.50	0.50
		Dynamic			0.45	0.45
	Co-efficient of friction (Functional / Functional)	Static			Block	Block
		Dynamic				
<b>Thermal</b>						
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0
		TD			0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	
<b>Optical</b>						
1	Haze	%	ASTM D 1003	3.5	3.5	
<b>Surface Tension</b>						
1	Corona Side	Dynes/cm	ASTM D 2578	56	56	
<b>Barrier</b>						
1	W.V. T. R. 38 <sup>o</sup> C 90%RH	Gm/m <sup>2</sup> /day	ASTM E 96	40	22	
		Gm/100in <sup>2</sup> /day		2.6	1.4	
2	O.T.R 23 <sup>o</sup> C 0%RH	Cc/m <sup>2</sup> /day	ASTM D 3985	100	70	
		CC/100in <sup>2</sup> /day		6.5	4.5	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40<sup>o</sup>C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A420

ARYAPET A420 is one side Co Polymer based chemically coated Polyester film suitable for printing, metallising, coating & Improved bond strength in flexible packaging applications.

Sr. No	Properties	Unit	Test Method	Typical Values							
General											
1	Thickness	Micron (Gauge)	JBF Method	8 (32)	10 (40)	11 (44)	12 (48)	19 (76)	23 (92)	36 (144)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	89.3	71.4	64.9	59.5	37.6	31.1	19.8	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical											
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (29.8)	2100 (29.8)	2100 (29.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)
2	Elongation at break	MD	%	ASTM D 882	120	120	120	120	120	120	120
		TD			110	110	110	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D1894	0.45	0.45	0.45	0.45	0.45	0.45	0.45
		Dynamic			0.40	0.40	0.40	0.40	0.40	0.40	0.40
Thermal											
1	Shrinkage@ 150° C/30'	MD	%	ASTM D 1204	2.2	2.0	2.0	2.0	2.0	2.0	1.8
		TD			0.4	0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	255	
Optical											
1	Haze	%	ASTM D 1003	3.0	3.0	3.5	3.5	3.5	4.0	4.5	
Surface Treatment level											
1	Treated side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	56	
2	Plain film side	Dynes/cm	ASTM D 2578	44	44	44	44	44	44	44	
Barrier											
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day gm/100in <sup>2</sup> /day	ASTM E 96	60 (3.6)	50 (3.2)	40 (2.6)	40 (2.6)	28 (1.8)	22 (1.4)	15 (1.0)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day cc/100in <sup>2</sup> /day	ASTM D 3985	120 (7.2)	110 (7.1)	100 (6.5)	100 (6.5)	80 (5.2)	70 (4.5)	50 (3.2)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A420

ARYAPET A420 is one side Co Polymer based chemically coated Polyester film suitable for printing, Metallising, coating & Improved bond strength in flexible packaging applications.

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	120	120	130	130	135	135
		TD			110	110	120	120	125	125
3	Co-efficient of friction	Static	--	ASTM D 1894	0.40	0.40	0.40	0.40	0.40	0.40
		Dynamic			0.35	0.35	0.35	0.35	0.35	0.35
<b>Thermal</b>										
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.8	1.6	1.6	1.4	1.4	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	5.0	7	10	12	18	20	
<b>Surface Treatment level</b>										
1	Treated side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	
2	Plain film side	Dynes/cm	ASTM D 2578	44	42	42	42	42	42	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A422

ARYA PET A422 is both side Copolymer coated Polyester film suitable for printing, metallising, coating & Improved bond strength in flexible packaging applications.

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	10 (40)	12 (48)	19 (72)	23 (92)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	71.4	59.5	37.6	31.1	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi)	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	120	120	120	120	120	120
		TD			110	110	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.45	0.45	0.45	0.45
		Dynamic			0.40	0.40	0.40	0.40	0.40	0.40
<b>Thermal</b>										
1	Shrinkage @150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	1.8	1.5
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	3.0	3.5	3.5	4.0	4.5	5.0	
<b>Surface Treatment level</b>										
1	Both side	Dynes/cm	JBF Method	56	56	56	56	56	56	
<b>Barrier</b>										
1	W.V.T.R. (38°C& 90% RH)	gm/m <sup>2</sup> /day	ASTM E 96	50	40	28	22	15	10	
		gm/100in <sup>2</sup> /day		2.6	2.6	1.8	1.4	1.0	0.6	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day	ASTM D 3985	110	100	80	70	50	40	
		cc/100in <sup>2</sup> /day		7.1	6.5	5.2	4.5	3.2	2.6	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A423

ARYAPET A423 is one side Anchor coating, suitable for Adhesion to Aqueous base resin

Sr. No.	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	10 (40)	12 (48)	19 (72)	23 (92)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	71.4	59.5	37.6	31.1	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi )	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	120	120	120	120	120	120
		TD			110	110	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.45	0.45	0.45	0.45
		Dynamic			0.40	0.40	0.40	0.40	0.40	0.40
Thermal										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	1.8	1.8
		TD			0.4	0.4	0.4	0.4	0.4	0.4
3	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	3.0	3.5	3.5	4.0	4.5	5.0	
Surface treatment level										
1	Treated side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	
Barrier										
1	W.V.T.R. (38°C& 90% RH)	gm/m <sup>2</sup> /day	ASTM E 96	50	40	28	22	15	10	
		gm/100in <sup>2</sup> /day		3.2	2.6	1.8	1.4	1.0	0.6	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day	ASTM D 3985	110	100	80	70	50	40	
		cc/100in <sup>2</sup> /day		7.1	6.5	5.2	4.5	3.2	2.6	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.



# Technical Specification

## ARYAPET – A425

ARYAPET A425 is a biaxially oriented, co-extruded one side chemically pretreated Polyester film for flexible packaging application where in it is required to resist Sterilisation in hot water or steam. The pre-treatment provides very good adhesion to solvent based printing inks and laminating adhesives.

Sr. No.	Properties	Unit	Test Method	Typical Values							
<b>General</b>											
1	Thickness	Micron (Gauge)	JBF Method	10 (40)	12 (48)	19 (72)	23 (92)	36 (144)	50 (200)	100 (400)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	71.4	59.5	37.6	31.1	19.8	14.3	7.14	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>											
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi)	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)	1800 (25.5)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	120	120	120	120	120	120	130
		TD			110	110	110	110	110	110	120
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.45	0.45	0.45	0.45	0.40
		Dynamic			0.40	0.40	0.40	0.40	0.40	0.40	0.35
<b>Thermal</b>											
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	1.8	1.8	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	255	
<b>Optical</b>											
1	Haze	%	ASTM D 1003	3.0	3.5	3.5	4.0	4.5	5.0	10	
<b>Surface Treatment level</b>											
1	Treated side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	56	
2	Plain film side	Dynes/cm	ASTM D 2578	44	44	44	44	44	44	44	
<b>Barrier</b>											
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day	ASTM E 96	50	40	28	22	15	10	8	
		gm/100in <sup>2</sup> /day		3.2	2.6	1.8	1.4	1.0	0.6	0.5	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day	ASTM D 3985	110	100	80	70	50	40	20	
		cc/100in <sup>2</sup> /day		7.1	6.5	5.2	4.5	3.2	2.6	1.3	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A427

**ARYAPET A427 is Transparent Polyester film chemically pretreated on one side. It is designed for printing and polyethylene adhesion.**

Sr. No.	Properties	Unit	Test Method	Typical Values					
<b>General</b>									
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	15 (60)	23 (92)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	47.6	31.1	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>									
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi )	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	120	120	120	120	120
		TD			110	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.45	0.45	0.45
		Dynamic			0.40	0.40	0.40	0.40	0.40
<b>Thermal</b>									
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	1.8	1.8
		TD			0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	
<b>Optical</b>									
1	Haze	%	ASTM D 1003	3.5	3.5	4.0	4.5	5.0	
<b>Barrier</b>									
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	40 (2.6)	40 (2.6)	22 (1.4)	15 (1.0)	10 (0.6)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	100 (6.5)	100 (6.5)	70 (4.5)	50 (3.2)	40 (2.6)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A427

**ARYAPET A427 is Transparent Polyester film chemically pretreated on one side. It is designed for printing and polyethylene adhesion.**

Sr. No.	Properties	Unit	Test Method	Typical Values			
<b>General</b>							
1	Thickness	Micron (Gauge)	JBF Method	75 (300)	100 (400)	125 (500)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	9.52	7.14	5.71	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	
<b>Mechanical</b>							
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi )	ASTM D 882	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	120	130	130
		TD			110	120	120
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.40	0.40
		Dynamic			0.40	0.35	0.35
<b>Thermal</b>							
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	1.6	1.4	1.4
		TD			0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	
<b>Optical</b>							
1	Haze	%	ASTM D 1003	9	10	12	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A428

**RYAPET A428 is Transparent Polyester film one side high coefficient of friction other side Copolymer coated. It is designed for printing, lamination and big bulk packaging.**

Sr. No.	Properties	Unit	Test Method	Typical Values			
<b>General</b>							
1	Thickness	Micron (Gauge)	JBF Method	10 (40)	12 (48)	23 (92)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	71.4	59.5	31.1	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	
<b>Mechanical</b>							
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi )	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (28.8)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)
2	Elongation at break	MD	%	ASTM D 882	120	120	120
		TD			110	110	110
3	Co-efficient of friction (Chemical /Chemical)	Static	--	ASTM D 1894	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45
	Co-efficient of friction (Functional / Functional)	Static			Block	Block	Block
		Dynamic					
<b>Thermal</b>							
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0
		TD			0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	
<b>Optical</b>							
1	Haze	%	ASTM D 1003	3.0	3.5	3.5	
<b>Surface Tension</b>							
1	Chemical Side	Dynes/cm	ASTM D 2578	56	56	56	
<b>Barrier</b>							
1	W.V. T. R. 38 <sup>o</sup> C 90%RH	Gm/m2/day	ASTM E 96	50	40	22	
		Gm/100in2/day		3.2	2.6	1.4	
2	O.T.R 23 <sup>o</sup> C 0%RH	Cc/m2/day	ASTM D 3985	110	100	70	
		CC/100in2/day		7.1	6.5	4.5	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40<sup>o</sup>C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A431

ARYAPET A431 is one side Acrylic coated Polyester film suitable for improved ink Adhesion for high quality printing & lamination process of flexible packaging applications.

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	10 (40)	11 (44)	12 (48)	19 (72)	23 (92)	36 (144)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	71.4	64.9	59.5	37.6	31.1	19.8	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi)	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (28.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)
2	Elongation at break	MD	%	ASTM D 882	120	120	120	120	120	120
		TD			110	110	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D1894	0.45	0.45	0.45	0.45	0.40	0.40
		Dynamic			0.40	0.40	0.40	0.40	0.40	0.40
<b>Thermal</b>										
1	Shrinkage @ 150° C/30'	MD	%	ASTM D1204	2.0	2.0	2.0	2.0	2.0	2.0
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	3.0	3.5	3.5	3.5	4.0	4.5	
<b>Surface Treatment level</b>										
1	Treated side	Dynes/cm	ASTM D 2578	40	40	40	40	40	40	
2	Plain film side	Dynes/cm	ASTM D 2578	44	44	44	44	44	44	
<b>Barrier</b>										
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	50 (3.2)	40 (2.6)	40 (2.6)	28 (1.8)	22 (1.4)	15 (1.0)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	110 (7.1)	100 (6.5)	100 (6.5)	80 (5.2)	70 (4.5)	50 (3.2)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A431

**ARYAPET A431 is one side Acrylic coated Polyester film suitable for improved ink Adhesion for high quality printing & lamination process of flexible packaging applications.**

Sr. No	Properties		Unit	Test Method	Typical Values					
<b>General</b>										
1	Thickness		Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)
2	Yield		M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80
3	Density		gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi )	ASTM D 882	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (27.0)
		TD			2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	120	120	130	130	135	135
		TD			110	110	120	120	125	125
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.40	0.40	0.40	0.40
		Dynamic			0.40	0.40	0.35	0.35	0.35	0.35
<b>Thermal</b>										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	1.6	1.6	1.4	1.4	1.4	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point		°C	DSC	255	255	255	255	255	255
<b>Optical</b>										
1	Haze		%	ASTM D 1003	5.0	9	10	12	18	20
<b>Surface Treatment level</b>										
1	Treated side		Dynes/cm	ASTM D 2578	40	40	40	40	40	40
2	Plain film side		Dynes/cm	ASTM D 2578	44	44	44	44	44	44

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A432

ARYAPET A432 is one side acrylic coated other side Copolymer coated Polyester film suitable for printing, metallising, coating & Improved bond strength in flexible packaging applications.

Sr. No.	Properties	Unit	Test Method	Typical Values	
<b>General</b>					
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	
3	Density	gm/cc	ASTM D 1505	1.4	
<b>Mechanical</b>					
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi )	ASTM D 882	2100 (28.8)
		TD			2200 (31.3)
2	Elongation at break	MD	%	ASTM D 882	120
		TD			110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45
		Dynamic			0.40
<b>Thermal</b>					
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0
		TD			0.4
2	Melting Point	<sup>o</sup> C	DSC	255	
<b>Optical</b>					
1	Haze	%	ASTM D 1003	3.5	
<b>Surface Treatment level</b>					
1	Copolymer coated side	Dynes/cm	ASTM D 2578	56	
1	Acrylic coated side	Dynes/cm	ASTM D 2578	40	
<b>Barrier</b>					
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	40 (2.6)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	100 (6.5)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A433

ARYAPET A433 is both side Acrylic chemical coated Polyester film suitable for improved ink adhesion for high quality printing & lamination processes of flexible packaging applications.

Sr. No.	Properties	Unit	Test Method	Typical Values					
<b>General</b>									
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	15 (60)	23 (92)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	47.6	31.1	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>									
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi )	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (28.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	120	120	120	120	120
		TD			110	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.45	0.45	0.45
		Dynamic			0.40	0.40	0.40	0.40	0.40
<b>Thermal</b>									
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	1.8	1.8
		TD			0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	
<b>Optical</b>									
1	Haze	%	ASTM D 1003	3.5	3.5	4.0	4.5	5.0	
<b>Surface Treatment level</b>									
1	Both side	Dynes/cm	ASTM D 2578	40	40	40	40	40	
<b>Barrier</b>									
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day	ASTM E 96	40	35	22	15	10	
		gm/100in <sup>2</sup> /day		2.6	2.3	1.4	1.0	0.6	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day	ASTM D 3985	100	90	70	50	40	
		cc/100in <sup>2</sup> /day		6.5	5.8	4.5	3.2	2.6	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A438

**RYAPET A438** is Transparent Polyester film one side high coefficient of friction other side Acrylic coated. It is designed for printing, lamination and big bulk packaging.

Sr. No.	Properties	Unit	Test Method	Typical Values		
<b>General</b>						
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	23 (92)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	31.1	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	
<b>Mechanical</b>						
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi )	ASTM D 882	2100 (28.8)	2100 (28.8)
		TD			2200 (31.3)	2200 (31.3)
2	Elongation at break	MD	%	ASTM D 882	100	100
		TD			100	100
3	Co-efficient of friction (Acrylic / Acrylic )	Static	--	ASTM D 1894	0.50	0.50
		Dynamic			0.45	0.45
	Co-efficient of friction (Functional / Functional)	Static			Block	Block
		Dynamic				
<b>Thermal</b>						
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0
		TD			0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	
<b>Optical</b>						
1	Haze	%	ASTM D 1003	3.5	3.5	
<b>Surface Tension</b>						
1	Acrylic Side	Dynes/cm	ASTM D 2578	40	40	
<b>Barrier</b>						
1	W.V. T. R. 380C 90%RH	Gm/m <sup>2</sup> /day Gm/100in <sup>2</sup> /day	ASTM E 96	40 2.6	22 1.4	
2	O.T.R 230C 0%RH	Cc/m <sup>2</sup> /day CC/100in <sup>2</sup> /day	ASTM D 3985	100 6.5	70 4.5	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A441

ARYAPET A441 is one side antistatic and other side plain film suitable for twist wrap application.

Sr. No.	Properties	Unit	Test Method	Typical Values			
<b>General</b>							
1	Thickness	Micron (Gauge)	JBF Method	18 (72)	20 (80)	23 (92)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	39.7	35.7	31.1	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	
<b>Mechanical</b>							
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi )	ASTM D 882	2100 (28.8)	2100 (29.8)	2000 (28.4)
		TD			2200 (31.3)	2200 (31.3)	2100 (29.8)
2	Elongation at break	MD	%	ASTM D 882	100	100	110
		TD			100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45
<b>Thermal</b>							
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	35	35	35
		TD			35	35	35
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	
<b>Optical</b>							
1	Haze	%	ASTM D 1003	4.0	4.0	4.0	
<b>Surface treatment level</b>							
1	Treated side	Dynes/cm	ASTM D 2578	56	56	56	
<b>Barrier</b>							
1	W.V.T.R. (38°C& 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	40 (2.6)	28 (1.8)	22 (1.4)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	100 (6.5)	80 (5.2)	70 (4.5)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A443

ARYAPET A443 is polyester film suitable for twist wrap application. One side Corona treated film can be supplied depending on the requirement from the customer.

Sr. No.	Properties	Unit	Test Method	Typical Values			
General							
1	Thickness	Micron (Gauge)	JBF Method	18 (72)	20 (80)	23 (92)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	39.7	35.7	31.1	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	
Mechanical							
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (29.8)	2100 (29.8)	2000 (28.4)
		TD			2200 (31.3)	2200 (31.3)	2100 (29.8)
2	Elongation at break	MD	%	ASTM D 882	100	100	110
		TD			100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45
Thermal							
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	35	35	35
		TD			35	35	35
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	
Optical							
1	Haze	%	ASTM D 1003	4.0	4.0	4.0	
Surface Treatment level							
1	Treatment siP	Dynes/cm	ASM D 2578	56	56	56	
2	Plain side			44	44	44	
Barrier							
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	28 (1.8)	28 (1.8)	22 (1.4)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	80 (5.2)	80 (5.2)	70 (4.5)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A444

**ARYAPET A444 one side antistatic and one side corona treated polyester film suitable for twist wrap application.**

Sr. No.	Properties	Unit	Test Method	Typical Values			
<b>General</b>							
1	Thickness	Micron (Gauge)	JBF Method	18 (72)	20 (80)	23 (92)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	39.7	35.7	31.1	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	
<b>Mechanical</b>							
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (29.8)	2100 (29.8)	2000 (28.4)
		TD			2200 (31.3)	2200 (31.3)	2100 (29.8)
2	Elongation at break	MD	%	ASTM D 882	100	100	110
		TD			100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45
<b>Thermal</b>							
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	35	35	35
		TD			35	35	35
2	Melting Point	°C	DSC	255	255	255	
<b>Optical</b>							
1	Haze	%	ASTM D 1003	4.0	4.0	4.0	
<b>Surface Treatment level</b>							
1	Corona Treatment side	Dynes/cm	ASM D 2578	52	52	52	
2	Antistatic side			56	56	56	
<b>Barrier</b>							
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	28 (1.8)	28 (1.8)	22 (1.4)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	80 (5.2)	80 (5.2)	70 (4.5)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A449

ARYAPET A449 is matte polyester film suitable for twist wrap application.  
One side Corona treated film can be supplied depending on the requirement of customer.

Sr. No.	Properties	Unit	Test Method	Typical Values	
General					
1	Thickness	Micron (Gauge)	JBF Method	23 (92)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	31.1	
3	Density	gm/cc	ASTM D 1505	1.4	
Mechanical					
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi )	ASTM D 882	2100 (28.8)
		TD			2200 (31.3)
2	Elongation at break	MD	%	ASTM D 882	100
		TD			100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50
		Dynamic			0.45
Thermal					
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	32
		TD			38
2	Melting Point	<sup>o</sup> C	DSC	255	
Optical					
1	Haze	%	ASTM D 1003	65	
Surface Tension					
1	Treatment side	Dynes/cm	ASTM D 2578	56	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stocked In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF BAHRAIN SPC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A450

ARYAPET A450 is Transparent Polyester film suitable for thermal lamination due to its controlled thermal properties in transverse direction. One side Corona treated or chemical coated film can be supplied depending on the requirement from the customer.

Sr. No	Properties	Unit	Test Method	Typical Values							
<b>General</b>											
1	Thickness	Micron (Gauge)	JBF Method	10 (40)	12 (48)	15 (60)	19 (76)	23 (92)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	71.4	59.5	47.6	37.5	31.1	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>											
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi)	ASTM D882	2100 (28.8)	2100 (28.8)	2100 (28.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100	100
		TD			100	100	100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D1894	0.45	0.45	0.45	0.45	0.45	0.45	0.45
		Dynamic			0.40	0.40	0.40	0.40	0.40	0.40	0.40
<b>Thermal</b>											
1	Shrinkage @150° C/30'	MD	%	ASTM D 1204	2.2	2.2	2.2	2.2	2.2	2.2	2.2
		TD			1.8	1.8	1.8	1.8	1.8	1.8	1.8
2	Melting Point	°C	DSC	255	255	255	255	255	255	255	
<b>Optical</b>											
1	Haze	%	ASTM D 1003	3.5	3.5	3.5	3.5	4.0	4.5	5.0	
<b>Surface Treatment level</b>											
1	Treated side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	56	
<b>Barrier</b>											
1	W.V.T.R. (38°C& 90% RH)	gm/m <sup>2</sup> /day	ASTM E 96	50	40	35	28	22	15	10	
		gm/100in <sup>2</sup> /day		3.2	2.6	2.3	1.8	1.4	1.0	0.6	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day	ASTM D 3985	110	100	90	80	70	50	40	
		cc/100in <sup>2</sup> /day		7.1	6.5	5.8	5.2	4.5	3.2	2.6	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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## Technical Specification

# ARYAPET – A450

ARYAPET A450 is Transparent Polyester film suitable for thermal lamination due to its controlled thermal properties in transverse direction. One side Corona treated or chemical coated film can be supplied depending on the requirement from the customer

Sr. No.	Properties	Unit	Test Method	Typical Values							
General											
1	Thickness	Micron (Gauge)	JBF Method	75 300	100 400	125 500	190 760	250 1000	300 1200	350 1400	
2	Yield	M <sup>2</sup> /Kg	JBF Method	9.52	7.14	5.71	3.76	2.85	2.38	2.04	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical											
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi)	ASTM D882	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1700 (24.2)	1700 (24.2)
		TD			2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1800 (25.6)	1800 (25.6)
2	Elongation at break	MD	%	ASTM D 882	110	110	120	120	120	130	130
		TD			100	100	110	110	110	120	120
3	Co-efficient of friction	Static	--	ASTM D1894	0.45	0.45	0.45	0.45	0.40	0.40	0.40
		Dynamic			0.40	0.40	0.40	0.40	0.35	0.35	0.35
Thermal											
1	Shrinkage @150° C/30'	MD	%	ASTM D 1204	2.0	1.8	1.6	1.4	1.2	1.2	1.0
		TD			1.8	1.6	1.4	1.2	1.0	1.0	1.0
2	Melting Point	°C	DSC	255	255	255	255	255	255	255	
Optical											
1	Haze	%	ASTM D 1003	8.0	10	12	17	22	30	35	
Electrical											
1	Break Down Voltage	KV	ASTM D 149	12.5	14	17	20	22	24	26	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stocked In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A 451

ARYAPET A451 is one side corona treated clear Polyester film suitable for thermal lamination due to its controlled thermal properties in transverse direction.

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	23 (92)	36 (144)	50 (200)	75 (300)	100 (400)	125 (500)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	31.1	19.8	14.3	9.52	7.14	5.71	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (29.8)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)
		TD			2200 (31.3)	2100 (29.8)	2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	100	100	110	110	110	120
		TD			100	100	100	100	100	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.45	0.45
		Dynamic			0.45	0.45	0.45	0.45	0.40	0.40
<b>Thermal</b>										
1	Shrinkage @ 150 <sup>o</sup> C /30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	2.0	2.0
		TD			1.6	1.6	1.6	1.6	1.6	1.6
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	1.5	1.5	1.5	1.5	1.5	1.5	
2	Light Transmittance	--	ASTM D 1003	89	89	89	89	89	89	
<b>Surface Treatment level</b>										
1	Corona side	Dynes/cm	ASTM D 2578	54	54	54	54	54	54	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A455

ARYAPET A455 is a biaxially oriented, co-extruded both side chemically pretreated Polyester film for flexible packaging application, suitable for aluminum metallization. Where in it is required to resist Sterilisation in hot water or steam. The pre-treatment provides very good adhesion to solvent based printing inks and laminating adhesives.

Sr. No.	Properties	Unit	Test Method	Typical Values					
General									
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	19 (72)	23 (92)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	37.6	31.1	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	
Mechanical									
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi )	ASTM D 882	2100 (28.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100
		TD			100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45
Thermal									
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	1.8	1.6
		TD			0.4	0.4	0.4	0.4	0.0
2	Melting Point	°C	DSC	255	255	255	255	255	
Optical									
1	Haze	%	ASTM D 1003	3.5	3.5	4.0	4.5	5.0	
Surface Treatment level									
1	Both side	Dynes/cm	ASTM D 2578	54	54	54	54	54	
Barrier									
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day	ASTM E 96	40	28	22	15	10	
		gm/100in <sup>2</sup> /day		2.6	1.8	1.4	1.0	0.6	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day	ASTM D 3985	100	80	70	50	40	
		cc/100in <sup>2</sup> /day		6.5	5.2	4.5	3.2	2.6	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A456

**ARYAPET A456** is one- side Chemical Coated Polyester film suitable for printing, metallising, coating & Improved bond strength in flexible packaging applications. **The film is not recommended for laminates undergoing high temperature applications as boiling, pasteurization, sterilization, retort, hot oven or microwave.**

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	10 (40)	12 (48)	19 ( 76)	23 (92)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	71.4	59.5	37.6	31.1	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi )	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (28.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100
		TD			100	100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.45
<b>Thermal</b>										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	1.8	1.8
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	3.0	3.5	3.5	4.0	4.5	5.0	
<b>Surface Treatment level</b>										
1	Chemical side	Dynes/cm	JBF Method	60	60	60	60	60	60	
2	Plain film side	Dynes/cm	JBF Method	42	42	42	42	42	42	
<b>Barrier</b>										
1	W.V.T.R. (38°C& 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	50 (3.2)	40 (2.6)	40 (2.6)	22 (1.4)	15 (1.0)	10 (0.6)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	110 (7.1)	100 (6.5)	100 (6.5)	70 (4.5)	50 (3.2)	40 (2.6)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A460

ARYAPET A460 Hazy film suitable for electrical, Industrial application.

Sr. No	Properties	Unit	Test Method	Typical Values													
<b>General</b>																	
1	Thickness	Micron Gauge	JBF Method	12 48	15 (60)	19 (76)	23 92	36 144	50 200	75 300							
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	47.6	37.5	31.1	19.8	14.3	9.52							
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	1.4							
<b>Mechanical</b>																	
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (29.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)	1900 (27.0)						
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)	2000 (28.4)						
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100	110						
		TD			100	100	100	100	100	100	100						
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.45	0.45	0.45	0.45	0.45						
		Dynamic			0.40	0.40	0.40	0.40	0.40	0.40	0.40						
<b>Thermal</b>																	
1	Shrinkage @150°C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	1.8	1.8	1.6						
		TD			0.4	0.4	0.4	0.4	0.4	0.4	0.4						
2	Melting Point	°C	DSC	255	255	255	255	255	255	255							
<b>Optical</b>																	
1	Haze	%	ASTM D 1003	4.0	4.0	4.5	5.0	6.0	7.0	8.0							
<b>Electrical</b>																	
1	Break Down Voltage	KV	ASTM D 149	3.5	4.0	4.5	5.5	7.5	9.5	12.5							
2	Surface Resistivity	Ohm	ASTM D 257	10 <sup>12</sup>													
3	Volume Resistivity	Ohm-cm	ASTM D 257	10 <sup>16</sup>													
4	Dielectric constant	-	ASTM D 150	2.6-3.7													
5	Dissipation Factor	--	IEC 250														
	23 <sup>0</sup> C – 50 Hz										0.002						
	23 <sup>0</sup> C – 1 KHz										0.005						
	23 <sup>0</sup> C – 1 MHz										0.011						
	0 <sup>0</sup> C – 50 Hz										0.004						
	50 <sup>0</sup> C – 50 Hz										0.0015						
	100 <sup>0</sup> C – 50 Hz										0.007						
150 <sup>0</sup> C – 50 Hz	0.006																

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places.

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# Technical Specification

## ARYAPET – A460

ARYAPET A460 Hazy film suitable for electrical, Industrial application.

Sr. No	Properties	Unit	Test Method	Typical Values								
<b>General</b>												
1	Thickness	Micron Gauge	JBF Method	100 400	125 500	175 700	190 760	250 1000	300 1200	350 1400		
2	Yield	M <sup>2</sup> /Kg	JBF Method	7.14	5.71	4.08	3.76	2.85	2.38	2.04		
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	1.4		
<b>Mechanical</b>												
1	Tensile Strength at break	MD	Kg/cm2 (Kpsi )	ASTM D 882	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1700 (24.2)	1700 (24.2)	
		TD			1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1800 (25.6)	1800 (25.6)	
2	Elongation at break	MD	%	ASTM D 882	110	120	120	120	120	130	130	
		TD			100	110	110	110	110	120	120	
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.45	0.45	0.40	0.40	0.40	
		Dynamic			0.40	0.40	0.40	0.40	0.35	0.35	0.35	
<b>Thermal</b>												
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.4	1.4	1.4	1.4	1.2	1.2	1.2	
		TD			0.4	0.4	0.4	0.4	0.4	0.4	0.4	
2	Melting Point	°C	DSC	255	255	255	255	255	255	255		
<b>Optical</b>												
1	Haze	%	ASTM D 1003	10	12	15	17	22	30	35		
<b>Electrical</b>												
1	Break Down Voltage	KV	ASTM D 149	14	17	18	20	22	24	26		
2	Surface Resistivity	Ohm	ASTM D 257	10 <sup>12</sup>								
3	Volume Resistivity	Ohm-cm	ASTM D 257	10 <sup>16</sup>								
4	Dielectric constant	-	ASTM D 150	2.6-3.7								
5	Dissipation Factor	--	IEC 250									
	23° C – 50 Hz											0.002
	23° C – 1 KHz											0.005
	23° C – 1 MHz											0.011
	0° C – 50 Hz											0.004
	50° C – 50 Hz											0.0015
	100° C – 50 Hz											0.007
150° C – 50 Hz	0.006											

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

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# Technical Specification

## ARYAPET – A461

ARYAPET A461 Hazy film suitable for photovoltaic application. (One or both side corona treatment available as per requirement)

Sr. No	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	75 (300)	125 (500)	190 (760)	250 (1000)	300 (1200)	350 (1400)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	9.52	5.71	3.76	2.85	2.38	2.04	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi )	ASTM D882	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1700 (24.2)	1700 (24.2)
		TD			2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1800 (25.6)	1800 (25.6)
2	Elongation at break	MD	%	ASTM D882	110	120	135	135	140	150
		TD			100	110	120	120	130	130
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.45	0.40	0.40	0.40
		Dynamic			0.40	0.40	0.40	0.35	0.35	0.35
<b>Thermal</b>										
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.0	1.0	1.0	1.0	1.0	1.0
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	9	12	17	22	30	35	
<b>Surface Treatment Level</b>										
1	Corona side	Dyne/cm	ASTM D 2578	54	54	54	54	54	54	
<b>Electrical</b>										
1	Break Down Voltage	KV	ASTM D 149	12.5	17	20	22	24	26	
2	Surface Resistivity	ohm	ASTM D 257	>10 <sup>12</sup>						
3	Volume Resistivity @ RT	Ohm cm	ASTM D 257	>10 <sup>16</sup>						
4	Dielectric Constant ( 25° C – 60 HZ )	--	ASTM D 150	3.3						
5	Dissipation factor at 60HZ	--	ASTM D 150	0.005						

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

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## Technical Specification

# ARYAPET – A462

**ARYAPET A462 Hazy Film with Slip coating is suitable for Solvent base inks (One or both side coating as per requirement)**

Sr. No.	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	100	110	110	120	120	120
		TD			100	100	100	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.35	0.35	0.35	0.35	0.35	0.35
		Dynamic			0.30	0.30	0.30	0.30	0.30	0.30
Thermal										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	1.4	1.4	1.4	1.4	1.4	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4
3	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	8	9	10	12	15	17	
Surface treatment level										
4	Treated side	Dynes/cm	ASTM D 2578	38	38	38	38	38	38	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

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# Technical Specification

## ARYAPET – A463

**ARYAPET A463 Hazy Film with Anchor coating, suitable for aqueous base inks. (Single or both side coating as per requirement)**

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	100	110	110	120	120	120
		TD			100	100	100	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.35	0.35	0.35	0.35	0.35	0.35
		Dynamic			0.30	0.30	0.30	0.30	0.30	0.30
<b>Thermal</b>										
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.4	1.4	1.4	1.4	1.4	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	8	9	10	12	15	17	
<b>Surface treatment level</b>										
1	Treated side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A464

**ARYAPET A464 Hazy Film with Copolymer coating. (Single or both side coating as per requirement)**

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	100	110	110	120	120	120
		TD			100	100	100	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.35	0.35	0.35	0.35	0.35	0.35
		Dynamic			0.30	0.30	0.30	0.30	0.30	0.30
<b>Thermal</b>										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	1.4	1.4	1.4	1.4	1.4	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	8	9	10	12	15	17	
<b>Surface treatment level</b>										
1	Treated side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

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# Technical Specification

## ARYAPET – A465

ARYAPET A465 is one- side Chemical Coated and other side corona treated Polyester film suitable for printing, metalizing, coating & Improved bond strength in flexible packaging applications. The film is not recommended for laminates undergoing high temperature applications as boiling, pasteurization, sterilization, retort, hot oven or microwave.

Sr. No.	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	10 (40)	12 (48)	19 ( 76)	23 (92)	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	71.4	59.5	37.6	31.1	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi )	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (28.8)	2100 (29.8)	2000 (28.4)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100
		TD			100	100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.45
Thermal										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	2.0	2.0	2.0	1.8	1.8
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	3.0	3.5	3.5	4.0	4.5	5.0	
Surface Treatment level										
1	Chemical side	Dynes/cm	ASTM D 2578	60	60	60	60	60	60	
2	Corona side			52	52	52	52	52	52	
Barrier										
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	50 (3.2)	40 (2.6)	40 (2.6)	22 (1.4)	15 (1.0)	10 (0.6)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	110 (7.1)	100 (6.5)	100 (6.5)	70 (4.5)	50 (3.2)	40 (2.6)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A466

ARYAPET A466 Hazy film with one or both side anchor coated suitable for photovoltaic application.

Sr. No	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	75 (300)	125 (500)	190 (760)	250 (1000)	300 (1200)	350 (1400)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	9.52	5.71	3.76	2.85	2.38	2.04	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi )	ASTM D882	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1700 (24.2)	1700 (24.2)
		TD			2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1800 (25.6)	1800 (25.6)
2	Elongation at break	MD	%	ASTM D882	110	120	135	135	140	150
		TD			100	110	120	120	130	130
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.45	0.40	0.40	0.40
		Dynamic			0.40	0.40	0.40	0.35	0.35	0.35
Thermal										
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.0	1.0	1.0	1.0	1.0	1.0
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	9	12	17	22	30	35	
Surface Treatment Level										
1	Coated side	Dyne/cm	ASTM D 2578	56	56	56	56	56	56	
Electrical										
1	Break Down Voltage	KV	ASTM D 149	12.5	17	20	22	24	26	
2	Surface Resistivity	ohm	ASTM D 257	>10 <sup>12</sup>						
3	Volume Resistivity @ RT	Ohm cm	ASTM D 257	>10 <sup>16</sup>						
4	Dielectric Constant ( 25° C – 60 HZ )	--	ASTM D 150	3.3						
5	Dissipation factor at 60HZ	--	ASTM D 150	0.005						

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

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# Technical Specification

## ARYAPET – A467

ARYAPET A467 Hazy film with PU coating is suitable for PU Resins/inks (One side or both side coating as per the requirement)

Sr. No	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	75 (300)	125 (500)	190 (760)	250 (1000)	300 (1200)	350 (1400)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	9.52	5.71	3.76	2.85	2.38	2.04	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi )	ASTM D882	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1700 (24.2)	1700 (24.2)
		TD			2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1800 (25.6)	1800 (25.6)
2	Elongation at break	MD	%	ASTM D882	110	120	135	135	140	150
		TD			100	110	120	120	130	130
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.45	0.40	0.40	0.40
		Dynamic			0.40	0.40	0.40	0.35	0.35	0.35
Thermal										
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.0	1.0	1.0	1.0	1.0	1.0
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	9	12	17	22	30	35	
Surface Treatment Level										
1	Coated side	Dyne/cm	ASTM D 2578	54	54	54	54	54	54	
Electrical										
1	Break Down Voltage	KV	ASTM D 149	12.5	17	20	22	24	26	
2	Surface Resistivity	ohm	ASTM D 257	>10 <sup>12</sup>						
3	Volume Resistivity @ RT	Ohm cm	ASTM D 257	>10 <sup>16</sup>						
4	Dielectric Constant ( 25° C – 60 HZ )	--	ASTM D 150	3.3						
5	Dissipation factor at 60HZ	--	ASTM D 150	0.005						

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

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# Technical Specification

## ARYAPET – A469

**ARYAPET A469** Hazy Film with one side Anchor coating other side corona treated, suitable for aqueous base inks.

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	100	110	110	120	120	120
		TD			100	100	100	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.40	0.40	0.40	0.40	0.40	0.40
		Dynamic			0.35	0.35	0.35	0.35	0.35	0.35
<b>Thermal</b>										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	1.4	1.4	1.4	1.4	1.4	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	8	9	10	12	15	17	
<b>Surface treatment level</b>										
1	Coated side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	
2	Corona Side	Dynes/cm	ASTM D 2578	54	54	54	54	54	54	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A470

ARYAPET A470 Hazy film suitable for Siliconising, Adhesive tape.

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	12 48	19 76	23 92	25 100	30 120	36 144	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	37.5	31.1	28.5	23.8	19.8	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	2000 (28.4)	2000 (28.4)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2100 (29.8)	2100 (29.8)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100
		TD			100	100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.45
<b>Thermal</b>										
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.6	1.6	1.6	1.6	1.6	1.6
		TD			0.0	0.0	0.0	0.0	0.0	0.0
2	Shrinkage @ 190° C/20'	MD	%	ASTM D 1204	3.5	3.5	3.0	3.0	3.0	3.0
		TD			0.0	0.0	0.0	0.0	0.0	0.0
3	Melting Point	°C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	3.5	4.0	4.5	5.0	5.5	6.5	
<b>Electrical</b>										
1	Break Down Voltage	KV	ASTM D 149	3.5	4.5	5.5	6.0	6.5	7.5	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

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# Technical Specification

## ARYAPET – A470

ARYAPET A470 Hazy film suitable for Siliconising, Adhesive tape.

Sr. No.	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	50 200	75 300	100 400	125 500	190 760	250 1000	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	3.76	2.85	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	100	110	110	120	120	120
		TD			100	100	100	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.45	0.45	0.45	0.40
		Dynamic			0.40	0.40	0.40	0.40	0.40	0.40
Thermal										
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.6	1.6	1.4	1.4	1.4	1.2
		TD			0.0	0.0	0.0	0.0	0.2	0.2
2	Shrinkage @ 190° C/20'	MD	%	ASTM D 1204	3.0	3.0	3.0	3.0	3.0	2.8
		TD			0.0	0.0	0.0	0.0	0.2	0.2
3	Melting Point	°C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	8	9	10	12	17	22	
Electrical										
1	Break Down Voltage	KV	ASTM D 149	9.5	12.5	14.0	17	20	22	

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### Storage & Handling

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# Technical Specification

## ARYAPET – A471

**ARYAPET A471** Hazy film with one side corona treated suitable for Silicon coating, Adhesive tape, and other applications.

Sr. No.	Properties	Unit	Test Method	Typical Values						
General										
1	Thickness	Micron (Gauge)	JBF Method	12 48	19 76	23 92	25 100	30 120	36 144	
2	Yield	M2/Kg	JBF Method	59.5	37.5	31.1	28.5	23.8	19.8	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
Mechanical										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (29.8)	2100 (29.8)	2000 (28.4)	2000 (28.4)	2000 (28.4)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2100 (29.8)	2100 (29.8)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100
		TD			100	100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.50	0.50	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.45
Thermal										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	1.6	1.6	1.6	1.6	1.6	1.6
		TD			0.0	0.0	0.0	0.0	0.0	0.0
2	Shrinkage @ 190 <sup>o</sup> C/20'	MD	%	ASTM D 1204	3.5	3.5	3.0	3.0	3.0	3.0
		TD			0.0	0.0	0.0	0.0	0.0	0.0
3	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
Optical										
1	Haze	%	ASTM D 1003	3.5	4.0	4.5	5.0	5.5	6.5	
Surface tension										
1	Corona side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	
2	Plain film side	Dynes/cm	ASTM D 2578	42	42	42	42	42	42	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places.

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A471

**ARYAPET A471** Hazy film with one side corona treated suitable for Silicon coating, Adhesive tape and other applications.

Sr. No.	Properties	Unit	Test Method	Typical Values				
General								
1	Thickness	Micron (Gauge)	JBF Method	50 200	75 300	100 400	125 500	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	
Mechanical								
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	100	110	110	120
		TD			100	100	100	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.45	0.45	0.45	0.45
		Dynamic			0.40	0.40	0.40	0.40
Thermal								
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	1.6	1.6	1.4	1.4
		TD			0.0	0.0	0.0	0.0
2	Shrinkage @ 190° C/20'	MD	%	ASTM D 1204	3.0	3.0	3.0	3.0
		TD			0.0	0.0	0.0	0.0
3	Melting Point	°C	DSC	255	255	255	255	
Optical								
1	Haze	%	ASTM D 1003	8	9	10	12	
Surface tension								
1	Corona side	Dynes/cm	ASTM D 2578	56	56	56	56	
2	Plain film side	Dynes/cm	ASTM D 2578	42	42	42	42	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

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## Technical Specification

# ARYAPET – A473

**ARYAPET A473 Hazy Film with Anchor coating, suitable for aqueous base inks. (Single or both side coating as per requirement). Film suitable for Siliconising, Adhesive tape.**

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	50 (200)	75 (300)	100 (400)	125 (500)	175 (700)	188 (752)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	14.3	9.52	7.14	5.71	4.08	3.80	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (kpsi)	ASTM D 882	1900 (27.0)	1900 (27.0)	1800 (25.5)	1800 (25.5)	1800 (25.5)	1800 (25.5)
		TD			2000 (28.4)	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)
2	Elongation at break	MD	%	ASTM D 882	100	110	110	120	120	120
		MD			100	100	100	110	110	110
3	Co-efficient of friction	Static	--	ASTM D 1894	0.35	0.35	0.35	0.35	0.35	0.35
		Dynamic			0.30	0.30	0.30	0.30	0.30	0.30
<b>Thermal</b>										
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	1.6	1.6	1.4	1.4	1.4	1.4
		TD			0.0	0.0	0.0	0.0	0.0	0.0
2	Shrinkage @ 190 <sup>o</sup> C/20'	MD	%	ASTM D 1204	3.0	3.0	3.0	3.0	3.0	3.0
		TD			0.0	0.0	0.0	0.0	0.0	0.0
3	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	8	9	10	12	15	17	
<b>Surface treatment level</b>										
1	Treated side	Dynes/cm	ASTM D 2578	56	56	56	56	56	56	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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## Technical Specification

# ARYAPET – A480

ARYAPET A480 is plain polyester film suitable for Mining application.

Sr. No.	Properties	Unit	Test Method	Typical Values		
General						
1	Thickness	Micron (Gauge)	JBF Method	36 (144)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	19.8	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	
Mechanical						
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2000 (28.4)	1900 (27.0)
		TD			2100 (29.8)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	100	100
		TD			100	100
3	Co-efficient of friction	Static	--	ASTM D1894	0.50	0.45
		Dynamic			0.45	0.40
Thermal						
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D1204	2.5	2.5
		TD			2.5	2.5
2	Melting Point	<sup>o</sup> C	DSC	255	255	
Optical						
1	Haze	%	ASTM D 1003	7.0	8.0	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A490

ARYAPET A490 Matte film suitable for label application & flexible packaging applications

Sr. No.	Properties	Unit	Test Method	Typical Values							
<b>General</b>											
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	19 (76)	23 (92)	30 (120)	36 (144)	50 (200)	75 (300)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	37.6	31.1	23.8	19.8	14.3	9.5	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>											
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1800 (25.6)	1800 (25.6)
		TD			1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1800 (25.6)	1800 (25.6)	1800 (25.6)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100	100
		TD			100	100	100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.35	0.35	0.35	0.35	0.35	0.35	0.35
		Dynamic			0.30	0.30	0.30	0.30	0.30	0.30	0.30
<b>Thermal</b>											
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D	2.0	2.0	2.0	2.0	2.0	1.8	1.6
		TD			0.4	0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	255	
<b>Optical</b>											
1	Haze	%	ASTM D 1003	47	60	65	68	70	83	88	
2	Transmittance	%	ASTM D 1003	87	85	85	83	80	80	80	
3	Gloss	%	ASTM D 2457	48	45	42	40	40	40	40	
<b>Barrier</b>											
1	W.V.T.R. (38°C& 90% RH)	gm/m <sup>2</sup> /day gm/100in <sup>2</sup> /day	ASTM E 96	40 (2.6)	28 (1.8)	22 (1.4)	18 (1.1)	15 (1.0)	10 (0.6)	07 (0.4)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day cc/100in <sup>2</sup> /day	ASTM D 3985	100 (6.5)	80 (5.2)	70 (4.5)	60 (3.6)	50 (3.2)	40 (2.6)	30 (2.0)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

The information given above is to the best of our knowledge and experience. Some of the properties can be changed as a result of suppliers' efforts to improve upon the quality or production efficiency of the subject. The information is believed to be true and accurate and is not intended to violate any statutory condition or right of a third party. **JBF RAK LLC** makes no warranty, express or implied, as to the fitness of the product for any specific use or purpose. The above data is purely for readers' consideration, investigation and verification and should be read in conjunction with the conditions for sale or contract.

# Technical Specification

## ARYAPET – A491

ARYAPET A491 Matte film with one side corona treated suitable for label & flexible packaging applications

Sr. No.	Properties	Unit	Test Method	Typical Values							
<b>General</b>											
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	19 (76)	23 (92)	30 (120)	36 (144)	50 (200)	75 (300)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	37.6	31.1	23.8	19.8	14.3	9.5	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>											
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2000 (28.4)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1800 (25.6)	1800 (25.6)
		TD			1900 (27.0)	1900 (27.0)	1900 (27.0)	1900 (27.0)	1800 (25.6)	1800 (25.6)	1800 (25.6)
2	Elongation at break	MD	%	ASTM D 882	100	100	100	100	100	100	100
		TD			100	100	100	100	100	100	100
3	Co-efficient of friction	Static	--	ASTM D 1894	0.35	0.35	0.35	0.35	0.35	0.35	0.35
		Dynamic			0.30	0.30	0.30	0.30	0.30	0.30	0.30
<b>Thermal</b>											
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D	2.0	2.0	2.0	2.0	2.0	1.8	1.6
		TD			0.4	0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	255	255	255	255	
<b>Optical</b>											
1	Haze	%	ASTM D 1003	47	60	65	68	70	83	88	
2	Transmittance	%	ASTM D 1003	87	85	85	83	80	80	80	
3	Gloss	%	ASTM D 2457	48	45	42	40	40	40	40	
<b>Surface Treatment level</b>											
1	Corona side	Dyne/cm	ASTM D 2578	56	56	56	56	56	56	56	
<b>Barrier</b>											
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day gm/100in <sup>2</sup> /day	ASTM E 96	40 (2.6)	28 (1.8)	22 (1.4)	18 (1.1)	15 (1.0)	10 (0.6)	07 (0.4)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day cc/100in <sup>2</sup> /day	ASTM D 3985	100 (6.5)	80 (5.2)	70 (4.5)	60 (3.6)	50 (3.2)	40 (2.6)	30 (2.0)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A492

ARYAPET A492 One side one side Co Polymer based chemically coated Polyester Matte film for label & flexible packaging applications.

Sr. No.	Properties	Unit	Test Method	Typical Values			
General							
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	23 (92)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	31.1	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	
Mechanical							
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2000 (31.3)	1800 (28.2)	1800 (28.2)
		TD			1850 (29.0)	1800 (28.2)	1800 (28.2)
2	Elongation at break	MD	%	ASTM D 882	100	100	100
		TD			80	70	70
3	Co-efficient of friction	Static	--	ASTM D1894	0.35	0.35	0.35
		Dynamic			0.26	0.26	0.26
Thermal							
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	2.0	1.8	1.6
		TD			0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	
Optical							
1	Haze	%	ASTM D 1003	47	65	83	
2	Transmittance	--	ASTM D 1003	87	85	83	
3	Gloss	%	ASTM D 2457	48	42	40	
Surface Treatment level							
1	Coated side	Dynes/cm	JBF Method	56	56	56	
2	Plain film side	Dynes/cm	JBF Method	44	44	44	
Barrier							
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	40 (2.6)	22 (1.4)	10 (0.6)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	100 (6.5)	70 (4.5)	40 (2.6)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed in a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A493

ARYAPET A493 One side Acrylic Coated Matte film suitable for label & flexible packaging applications

Sr. No.	Properties	Unit	Test Method	Typical Values			
General							
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	23 (92)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	31.1	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	
Mechanical							
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2000 (31.3)	1800 (28.2)	1800 (28.2)
		TD			1850 (29.0)	1800 (28.2)	1800 (28.2)
2	Elongation at break	MD	%	ASTM D 882	100	100	100
		TD			80	70	70
3	Co-efficient of friction	Static	--	ASTM D1894	0.35	0.35	0.35
		Dynamic			0.26	0.26	0.26
Thermal							
1	Shrinkage @ 150° C/30'	MD	%	ASTM D 1204	2.0	1.8	1.6
		TD			0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	
Optical							
1	Haze	%	ASTM D 1003	47	65	83	
2	Transmittance	--	ASTM D 1003	87	85	83	
3	Gloss	%	ASTM D 2457	48	42	40	
Surface Treatment level							
1	Acrylic side	Dynes/cm	JBF Method	38	38	38	
2	Plain film side	Dynes/cm	JBF Method	44	44	44	
Barrier							
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	40 (2.6)	22 (1.4)	10 (0.6)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	100 (6.5)	70 (4.5)	40 (2.6)	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A495

**ARYAPET A495** One side one side chemically pretreated Matte film for flexible packaging application where in it is required to resist Sterilization in hot water or steam. The pre-treatment provides very good adhesion to solvent based printing inks and laminating adhesives.

Sr. No.	Properties	Unit	Test Method	Typical Values			
<b>General</b>							
1	Thickness	Micron (Gauge)	JBF Method	12 (48)	23 (92)	50 (200)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	31.1	14.3	
3	Density	gm/cc	ASTM D 1505	1.4	1.4	1.4	
<b>Mechanical</b>							
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2000 (31.3)	1800 (28.2)	1800 (28.2)
		TD			1850 (29.0)	1800 (28.2)	1800 (28.2)
2	Elongation at break	MD	%	ASTM D 882	100	100	100
		TD			80	70	70
3	Co-efficient of friction	Static	--	ASTM D1894	0.35	0.35	0.35
		Dynamic			0.26	0.26	0.26
<b>Thermal</b>							
1	Shrinkage @ 150 <sup>o</sup> C/30'	MD	%	ASTM D 1204	2.0	1.8	1.6
		TD			0.4	0.4	0.4
2	Melting Point	<sup>o</sup> C	DSC	255	255	255	
<b>Optical</b>							
1	Haze	%	ASTM D 1003	47	65	83	
2	Transmittance	--	ASTM D 1003	87	85	83	
3	Gloss	%	ASTM D 2457	48	38	40	
<b>Surface Treatment level</b>							
1	Treated side	Dynes/cm	JBF Method	56	56	56	
2	Plain film side	Dynes/cm	JBF Method	44	44	44	
<b>Barrier</b>							
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day (gm/100in <sup>2</sup> /day)	ASTM E 96	40 (2.6)	22 (1.4)	10 (0.6)	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day (cc/100in <sup>2</sup> /day)	ASTM D 3985	100 (6.5)	70 (4.5)	40 (2.6)	

MD = Machine Direction, TD = Transverse Direction

#### Storage & Handling

ARYA PET need to be stock ed In a closed warehouse & should not exposed to the direct sun light or light sources , Avoid extremes of humidity , It is recommended to store below 40°C in dry places

#### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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# Technical Specification

## ARYAPET – A499

**ARYAPET A499 is Transparent Polyester bi-axially oriented isotropic polyester film. Suitable for lidding application for dairy products. One side Corona treated or chemical coated film can be supplied depending on the requirement from the customer.**

Sr. No.	Properties	Unit	Test Method	Typical Values						
<b>General</b>										
1	Thickness	Micron (Gauge)	JBF Method	10 (40)	12 (48)	23 (92)	36 (144)	50 (200)	75 (300)	
2	Yield	M <sup>2</sup> /Kg	JBF Method	59.5	59.5	31.1	19.8	14.3	9.52	
3	Density	Gm/cc	ASTM D 1505	1.4	1.4	1.4	1.4	1.4	1.4	
<b>Mechanical</b>										
1	Tensile Strength at break	MD	Kg/cm <sup>2</sup> (Kpsi)	ASTM D 882	2100 (28.8)	2100 (28.8)	2100 (28.8)	2000 (28.4)	1900 (27.0)	1900 (27.0)
		TD			2200 (31.3)	2200 (31.3)	2200 (31.3)	2100 (29.8)	2000 (28.4)	2000 (28.4)
2	Elongation at break	MD	%	ASTM D 882	120	120	120	130	130	130
		TD			110	110	110	110	110	110
3	Co-efficient of friction	Static	--	ASTM D1894	0.50	0.50	0.50	0.50	0.50	0.50
		Dynamic			0.45	0.45	0.45	0.45	0.45	0.45
4	Ratio of Tensile Strength (+45°/-45°)	--	JBF Method	0.66 to 1.5						
	Ratio of Elongation (+45°/-45°)			0.5 to 2.0						
<b>Thermal</b>										
1	Shrinkage @ 150° C/30'	MD	%	ASTM D1204	2.2	2.0	2.0	1.8	1.6	1.4
		TD			0.4	0.4	0.4	0.4	0.4	0.4
2	Melting Point	°C	DSC	255	255	255	255	255	255	
<b>Optical</b>										
1	Haze	%	ASTM D 1003	3.0	3.5	3.5	4.5	5.0	6.0	
<b>Surface Treatment level</b>										
1	Treatment side	Dynes/cm	ASM D 2578	56	56	56	56	56	56	
2	Plain side			42	42	42	42	42	42	
<b>Barrier</b>										
1	W.V.T.R. (38°C & 90% RH)	gm/m <sup>2</sup> /day gm/100in <sup>2</sup> /day	ASTM E 96	50 3.2	40 2.6	22 1.4	15 1.0	10 0.6	8 0.5	
2	O.T.R. (23°C & 0%RH)	cc/m <sup>2</sup> /day cc/100in <sup>2</sup> /day	ASTM D 3985	110 7.1	100 6.5	70 4.5	50 3.2	40 2.6	30 1.9	

MD = Machine Direction, TD = Transverse Direction

### Storage & Handling

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### Food Contact:

ARYA PET complies with EC and FDA regulations on packaging for direct contact with foodstuffs. Specific document and MSDS are available on request.

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