

## Technical Data sheet of A - PET Film

Product name	APET clear A/B/A quality
Characteristic	A-PET film for thermoforming, laminating
Surface	Without treatment and silicone coating
Thickness range	150 - 1200 $\mu\text{m}$
Widths	80 - 1800 mm
Layer	A/B/A (10%/80%/10%)
Colours	CLEAR, COLOURED on request
Additives	Antiblock-slip agent SUKANO S479-HP-C (internal)

Properties:	Test method	Value	Unit
Thickness tolerances	DIN 53370:2006	150 - 300 $\pm$ 4 % 301 - 500 $\pm$ 3 % 501 - 800 $\pm$ 2,5 % 801 - 1200 $\pm$ 2 %	$\mu\text{m}$
Unit weight	EN ISO 2286-2	150 - 300 $\pm$ 10 % 301 - 600 $\pm$ 7 % 601 - 1200 $\pm$ 5 %	$\text{g}/\text{m}^2$
Colour	DIN 5033	Visual control	
Width tolerances	EN ISO 1923:1995	$\pm$ 1	mm
Density	EN ISO 1183-2:2004	1,34	$\text{g}/\text{cm}^3$
Melting Point	EN ISO 11357-3:2013	245	$^{\circ}\text{C}$
Intrinsic viscosity (IV)	ASTM D2857	0,60 - 0,75	dl/g
Tensile strength	EN ISO 527-3:1995	65 - 70	$\text{N}/\text{mm}^2$
Impact strength	EN ISO 8256:2004	$\geq$ 250	$\text{kJ}/\text{m}^2$
Coefficient of friction	EN ISO 8295:2004	0,2 - 0,4	-
Vicat softening point	EN ISO 306:2004	80	$^{\circ}\text{C}$
Surface tension	ASTM D 2578	38	dyn
Shrinkage (Oven 125 $^{\circ}\text{C}$ 3 min.) Thickness 400 $\mu\text{m}$	lengthwise cross	2 - 4 1 - 2	% %
Gas transmission CO <sub>2</sub> O <sub>2</sub> N <sub>2</sub>	DIN 53380	14 2,3 0,4	$\frac{\text{cm}^3}{\text{m}^2 \cdot 24\text{h} \cdot \text{bar}}$
Water vapour transmission 23 $^{\circ}\text{C}$ 85 % RH	EN ISO 15106-3:2003	0,5	$\frac{\text{g}}{\text{m}^2 \cdot 24\text{h} \cdot \text{bar}}$
Dirt / Black points	Detector / visual (Black points shall not lead to thermoforming issues)	$\geq$ 0,20 - $\leq$ 1 $\text{mm}^2$ - max 8; $>$ 1 $\text{mm}^2$ - max 1	n / 10 $\text{m}^2$
Fish eyes	Detector / visual (Fish eyes shall not lead to thermoforming issues)	$<$ 1 $\text{mm}^2$ - allowed; $\geq$ 1 - $\leq$ 3 $\text{mm}^2$ - max 30; $>$ 3 $\text{mm}^2$ - max 2	n / 10 $\text{m}^2$
Flies and insects	Detector / visual	none	
Pinholes	Visual	none	
Deep Thermoforming		Suitable	
Thermoforming Temperature		$\geq$ 120	$^{\circ}\text{C}$
Barrier characteristics		Good	
Application temperature		Min. -35, Max. +70	$^{\circ}\text{C}$
Colouring		Possible	

We hereby confirm that our film is designed to get in direct contact with watery, sour, fatty, alcohol containing (up to 20 % by vol.) and hot food products for human consumption. If the temperature of foodstuff is 70 - 100 °C – contact time should not exceed 15 min.

We hereby declare that our film can contain up to 50 % of Veolia PET bottle flakes (suitable to get in direct contact with foodstuff) in outside layers.

The product herewith complies with the essential requirements of EU directives: 10/2011/EC, 82/711/EEC; 85/572/EEC; 92/39/EEC; 93/43/EEC; 94/62/EC; 1935/2004/EEC; 2023/2006 as well as with the changes and addendum to the above requirements, and Lithuania's Hygiene Norm HN 16:2006 "Destination and special usage conditions of material or a product, designed to get in direct contact with food", confirmed by Minister of Health of the Republic of Lithuania on 2011 May 2nd order No. V-417 (Žin., 2011, No. 54-2620).

Quality manager



Date: 23.02.2014