



Product Information Sheet

Kaladex® 2021L

Product Description

Kaladex® 2021L is a biaxially oriented PolyEthylene Napthalate (PEN) film. PolyEthylene Napthalate (PEN) is a high performance polyester that offers many enhanced properties such as strength, heat resistance, hydrolysis resistance, dimensional stability and low oligomer extraction, while maintaining the ease of processing found with standard PolyEthylene Terephthalate (PET) films.

Kaladex® 2021L is a lightly filled film to give good handling properties and is pretreated on one side (outside of reel) to give enhanced adhesion to a wide range of inks, lacquers and adhesives. It is currently available on a development basis at a thickness of 25 micron with additional thicknesses possible subject to market demand. Kaladex® is the trademark for a range of PolyEthylene Napthalate (PEN) films from Mylar Specialty Films.

Typical Applications

Kaladex® 2021L has been engineered to provide a controlled lower shrinkage level and is particularly suitable for applications such as flexible circuitry, fuel cell gaskets and a range of industrial applications where the enhanced properties of PEN over standard PET films offer benefits.

General Information

Kaladex® 2021L can withstand a broad range of temperatures and has good resistance to moisture and most chemicals. As per Article 3(3) of the REACH regulation (EC) No 1907/2006 Kaladex® 2000L film is classified as an article. There are no substances intended to be released from the above film under normal, reasonably foreseeable conditions of use, as defined by Article 7(1).

Food Contact Advice

Kaladex® 2021L has not been assessed against Food Contact Legislation

Film Properties

Property	Unit	Typical Values	Test Method
General			
Density	g/cm ³	1.36	ASTM D1505-79
Area Yield	m ² /kg	29.41	
Mechanical			
		25	
F5 Value MD	kg/mm ²	15	ASTM D882-83
F5 Value TD	kg/mm ²	15	ASTM D882-83
Tensile Strength MD	kg/mm ²	20	ASTM D882-83
Tensile Strength TD	kg/mm ²	28	ASTM D882-83
Elongation to Break MD	%	100	ASTM D882-83
Elongation to Break TD	%	70	ASTM D882-83
Optical			
		25	
Haze	%	6	ASTM D1003-77
Thermal			
		25	
Melting Point	°C	269	DSC
Glass Transition Temperature	°C	121	DSC
Shrinkage - 220°C, 10min (MD)	%	1.3	ASTM D1204-78
Shrinkage - 220°C, 10min (TD)	%	0.4	ASTM D1204-78
Shrinkage - 150°C, 30 min (MD)	%	0.35	ASTM D1204-78
Shrinkage - 150°C, 30 min (TD)	%	0.25	ASTM D1204-78
Co-efficient of Thermal Expansion (MD)	10(-6)/°C	13	ASTM E831-06
Co-efficient of Thermal Expansion (TD)	10(-6)/°C	13	ASTM E831-06
Co-efficient of Hydroscopic Expansion (MD)	10(-6)/% RH	11	In-house Method
Co-efficient of Hydroscopic Expansion (TD)	10(-6)/% RH	11	In-house Method

Disposal Advice

Disposal of Kaladex® 2000L does not present special disposal problems. Where waste occurs in a clean, uncontaminated form it can be recycled. In most circumstances, once Kaladex® 2000L has been laminated, coated, printed or metallised, incineration with Energy Recovery is the most environmentally efficient recovery route. Kaladex® 2000L can also be burned in an incinerator with normal refuse or can be buried as a relatively inert material in a landfill. The disposal method should comply with appropriate local and country regulations.

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The information provided in this Product Information Sheet corresponds to our knowledge on the subject at the date of its publication. This information may be subject to revision as new knowledge and experience becomes available. The data provided fall within the normal range of product properties and relate only to the specific material designated; these data may not be valid for such material used in combination with any other materials or additives or in any process unless expressly indicated otherwise. The data provided should not be used to establish specification limits or used alone as the basis of design; they are not intended to substitute for any testing you may need to conduct to determine for yourself the suitability of a specific material for your particular purposes. Since Mylar Specialty Films cannot anticipate all variations in actual end-use conditions, Mylar Specialty Films makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent rights. Caution: Medical device applications incorporating Mylar®, Melinex® or Kaladex® films must be reviewed and approved under Mylar Specialty Films Medical Device Policy. Mylar®, Melinex® and Kaladex® films are not intended for implantation in the human body. For other applications, please contact your Technical Service Representative for more details. Copyright © 2024

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