

Goodfellow Cellophane, Rayophane Regenerated Cellulose Film

Category : Polymer , Film , Renewable/Recycled Polymer , Thermoplastic , Cellulosic

Material Notes:

All forms of cellulose degrade before they melt but natural cellulose can be regenerated by the xanthate process to manufacture fibres, commonly called rayon or viscose, and film, commonly called by its earliest brand name Cellophane®. The latter films are plasticized by glycols and water to overcome their brittleness and are transparent, colorless and of moderate crystallinity. They were very widely used for packaging but have been substantially replaced by synthetic thermoplastics, especially polypropylene. They have very high permeability to moisture and, especially when dry, very low permeability to permanent gases. Their moisture content varies greatly with their environment reaching approximately 50% at 100% relative humidity. Not surprisingly, this causes many of their properties to vary considerably - so summarized values must be treated with considerable caution. Information provided by Goodfellow.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Goodfellow-Cellophane-Rayophane-Regenerated-Cellulose-Film.php

Physical Properties	Metric	English	Comments
Density	1.44 g/cc	0.0520 lb/in ³	
Water Absorption	50 %	50 %	
Oxygen Transmission	0.350 - 3.50 cc-mm/m ² -24hr-atm	0.889 - 8.89 cc-mil/100 in ² -24hr-atm	
Nitrogen Transmission	1.75 - 5.25 cc-mm/m ² -24hr-atm	4.44 - 13.3 cc-mil/100 in ² -24hr-atm	
Carbon Dioxide Transmission	0.350 - 4.40 cc-mm/m ² -24hr-atm	0.889 - 11.2 cc-mil/100 in ² -24hr-atm	

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	55.0 MPa	7980 psi	Transverse
	120 MPa	17400 psi	Longitudinal
Elongation at Break	18 %	18 %	Longitudinal
	55 %	55 %	Transverse
Modulus of Elasticity	3.00 GPa	435 ksi	Transverse
Tensile Modulus	5.00 GPa	725 ksi	Longitudinal

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	1.40 J/g-°C	0.335 BTU/lb-°F	
Thermal Conductivity	0.0600 W/m-K	0.416 BTU-in/hr-ft ² -°F	Fiber

Thermal Properties	Metric	English	Comments
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Optical Properties	Metric	English	Comments
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Transmission, Visible	90 %	90 %	transparent; thickness not quantified
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Electrical Properties	Metric	English	Comments
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Electrical Resistivity	1.00e+10 - 1.00e+12 ohm-cm	1.00e+10 - 1.00e+12 ohm-cm	
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Dielectric Constant	4.0	4.0	Dry
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Dielectric Strength	30.0 - 50.0 kV/mm @Thickness 1.00 mm	762 - 1270 kV/in @Thickness 0.0394 in	
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Dissipation Factor	0.060 @Frequency 1000 Hz	0.060 @Frequency 1000 Hz	
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Descriptive Properties	Value	Comments
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Chemical Resistance - Alkalis	Good	
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Chemical Resistance - Dilute Acids	Good	
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Chemical Resistance - Greases and Oils	Good	
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Permeability to Carbon Dioxide @25°C	0.004-0.05 x 10 ⁻¹³ cm ³ .cm cm ⁻² s ⁻¹ Pa ⁻¹	
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Permeability to Hydrogen	0.88 - 4.4 cc-mm/m ² -24hr-atm	
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Permeability to Hydrogen @25°C	0.01-0.05 x 10 ⁻¹³ cm ³ .cm cm ⁻² s ⁻¹ Pa ⁻¹	
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Permeability to Nitrogen @25°C	0.02-0.06 x 10 ⁻¹³ cm ³ .cm cm ⁻² s ⁻¹ Pa ⁻¹	
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Permeability to Oxygen @25°C	0.004-0.04 x 10 ⁻¹³ cm ³ .cm cm ⁻² s ⁻¹ Pa ⁻¹	
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Permeability to Water @25°C	20000 x 10 ⁻¹³ cm ³ .cm cm ⁻² s ⁻¹ Pa ⁻¹	
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Radiation Resistance	Fair	
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