





TECHNICAL DATA SHEET Rexolite

Rexolite® is a thermoset, rigid, translucent plastic produced by cross linking and Rexolite is specifically geared for the microwave industry. The main feature of Rexolite is its stable electrical properties into the GHz frequency range. It is also optically clear (very similar to Acrylic), dimensionally stable, and has excellent sound transmission characteristics. Because of these features, Rexolite® is often used for high-frequency circuit substrates, microwave components, and lenses for acoustic, optical and radio-frequency applications. Rexolite has a Dielectric constant of 2.53 (up to 500 GHz) and exhibits an extremely low dissipation factor.

Grades of Rexolite Rexolite® 1422 - unfilled

Unfilled Rexolite® 1422 is chemically resistant, light weight, resists water absorption, and has negligible outgassing.

Rexolite® 2200 - glass-filled

Glass reinforced Rexolite® 2200 provides greater rigidity and dimensional stability while maintaining many of the useful characteristics of basic Rexolite®. The glass reinforcement yields a product with an exceptional strength-to-weight ratio and increased tensile strength.

Rexolite® copper-clad

For use in electronic circuits, both Rexolite® 1422 and 2200 may be ordered in sheet thicknesses to 1/4" with copper-clad surface in thicknesses ranging from 1/2-ounce to 2-ounce copper.

Benefits

Outstanding dielectric properties High voltage insulation Radiation resistance Rigidity Chemical resistance Self-extinguishing Light Wight

Applications

Microwave lenses
Microwave circuitry
Antenna
Coaxial cable connectors
Sound transducers
Satellite applications
Surveillance equipment
Radar
Radomes

SHAPES AVAILABLE





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D792	TM or UL test	Property	Rexolite® 1422 unfilled	Rexolite® 2200 glass-filled
D.792 (g/cm²) 1.05 1.1	YSICAL		<u> </u>	
D.792 (g/cm²) 1.05 1.1	Г	Density (lh/in³)	n n38	0.042
D570 Water Absorption, 24 hrs (%) D.08 D.09 D.09 D.09 D.000 D.00	D792			1.11
MECHANICAL D638 Tensile Strength (psi) 9,000 9,5 D638 Flexural Strength (psi) 11,500 10 D256 IZOD Notched Impact (ft-lb/in) 0.3 0.7 THERMAL D696 Coefficient of Linear Thermal Expansion (x 10 ⁻⁵ in./in./*F) 3.8 3.2 D648 (*F) -76 to +212 -10 (*C) -60 to +100 -75 C177 (BTU-in/ft²-lhr.*F) 1.01 1.4 (x 10 ⁻⁴ cal/cm-sec-°C) 3.5 5.6 ELECTRICAL D149 Dielectric Strength (V/mil) short time, 1/8" thick 500 50 D150 Dielectric Constant (1 MHz to 500 GHz) 2.53 2.6 D150 Dielectric Constant (2 MHz by 200 GHz) 0.00012 0.0 D150 at 1 MHz at 10 GHz 0.00012 0.0 D257 Surface Resistivity (ohm-cm)at 50% RH >10 ¹⁴ 5 x D257 Volume Resistivity (ohm-cm)at 50% RH >10 ¹⁶ 5 x OPTICAL AND ACOUSTIC - Acoustic Imp				
Decided Name	70	Water Absorption, 24 hrs (%)	0.08	0.10
D638 Flexural Strength (psi) 11,500 10 D256 IZOD Notched Impact (ft-lb/in) 0.3 0.7 THERMAL D696 Coefficient of Linear Thermal Expansion (x 10 ⁻⁵ in./in./°F) 3.8 3.2 Recommended Operating Temperature Range (°F) -76 to +212 -10	CHANICAL			
D256 IZOD Notched Impact (ft-lb/in) D.3 D.7	38	Fensile Strength (psi)	9,000	9,500
### THERMAL D696	38 F	Flexural Strength (psi)	11,500	10,500
D696 Coefficient of Linear Thermal Expansion	56 I	ZOD Notched Impact (ft-lb/in)	0.3	0.75
D696	ERMAL			
D696	ľ	Coefficient of Linear Thermal Expansion		1
Comparison Com	06	·	3.8	3.2
Thermal Conductivity (BTU-in/ft²-hr-°F) (x 10 ⁻⁴ cal/cm-sec-°C) ELECTRICAL D149 Dielectric Strength (V/mil) short time, 1/8" thick D150 Dissipation Factor at 1 MHz at 10 MHz at 10 MHz at 10 GHz D257 Surface Resistivity (ohm-cm)at 50% RH D257 Volume Resistivity (ohm-cm)at 50% RH D10 ¹⁴ Sx OPTICAL AND ACOUSTIC Acoustic Impedance - Velocity of Sound (in/sec) Optical Transmittance, Visible Light Refractive Index @ 589 nM - Condition 1.59 1.01 1.4 2.5 3.5 5.6 5.6 5.0 5.0 5.0 5.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6		Recommended Operating Temperature Range		
Thermal Conductivity (BTU-in/ft²-hr-°F) (x 10 ⁻⁴ cal/cm-sec-°C) ELECTRICAL D149 Dielectric Strength (V/mil) short time, 1/8" thick D150 Dissipation Factor at 1 MHz at 10 MHz at 10 MHz at 10 GHz D257 Surface Resistivity (ohm-cm)at 50% RH D257 Volume Resistivity (ohm-cm)at 50% RH P10 ¹⁴ S x OPTICAL AND ACOUSTIC Acoustic Impedance Velocity of Sound (in/sec) Optical Transmittance, Visible Light Refractive Index @ 589 nM 1.59 - 1.01 1.4 1.01 1.4 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5	D648	°F)	-76 to +212	-103 to +212
C177 (BTU-in/ft²-hr-°F)	(°C)	-60 to +100	-75 to +100
(x 10 ⁻⁴ cal/cm-sec-°C) 3.5 5.0	7	Thermal Conductivity		
### ELECTRICAL D149 Dielectric Strength (V/mil) short time, 1/8" thick 500 50 D150 Dielectric Constant (1 MHz to 500 GHz) 2.53 2.6 D150 Dissipation Factor			1.01	1.45
Dielectric Strength (V/mil) short time, 1/8" thick 500		x 10 ⁻⁴ cal/cm-sec-°C)	3.5	5.0
D150 Dielectric Constant (1 MHz to 500 GHz) 2.53 2.6 Dissipation Factor at 1 MHz 0.00012 0.0 at 10 MHz 0.00025 0.0 at 10 GHz 0.00066 0.0 D257 Surface Resistivity (ohm-cm)at 50% RH >10 ¹⁴ 5 x D257 Volume Resistivity (ohm-cm)at 50% RH >10 ¹⁶ 5 x OPTICAL AND ACOUSTIC - Acoustic Impedance 2.5 Velocity of Sound (in/sec) 93,000 Optical Transmittance, Visible Light 87% - Refractive Index @ 589 nM 1.59 -	ECTRICAL		<u> </u>	I
Dissipation Factor	49 [Dielectric Strength (V/mil) short time, 1/8" thick	500	500
D150 at 1 MHz	50 C	Dielectric Constant (1 MHz to 500 GHz)	2.53	2.62
D150 at 1 MHz		Dissipation Factor		
at 10 MHz	a		0.00012	0.0004
at 10 GHz	50			0.0005
D257 Volume Resistivity (ohm-cm)at 50% RH >10 ¹⁶ 5 x OPTICAL AND ACOUSTIC - Acoustic Impedance 2.5 Velocity of Sound (in/sec) 93,000 Optical Transmittance, Visible Light 87% - Refractive Index @ 589 nM 1.59 -				0.0014
OPTICAL AND ACOUSTIC - Acoustic Impedance 2.5 Velocity of Sound (in/sec) 93,000 Optical Transmittance, Visible Light 87% - Refractive Index @ 589 nM 1.59 -	57 S	Surface Resistivity (ohm-cm)at 50% RH	>10 ¹⁴	5 x 10 ¹²
- Acoustic Impedance 2.5 Velocity of Sound (in/sec) 93,000 Optical Transmittance, Visible Light 87% - Refractive Index @ 589 nM 1.59 -	57	/olume Resistivity (ohm-cm)at 50% RH	>1016	5 x 10 ¹³
- Velocity of Sound (in/sec) 93,000 Optical Transmittance, Visible Light 87% - Refractive Index @ 589 nM 1.59 -	TICAL AND ACO	USTIC		
- Velocity of Sound (in/sec) 93,000 Optical Transmittance, Visible Light 87% - Refractive Index @ 589 nM 1.59 -		Acquetic Impedance	bs	I
- Optical Transmittance, Visible Light 87% - Refractive Index @ 589 nM 1.59 -		·		
Refractive Index @ 589 nM 1.59 -		/elocity of Sound (in/sec)	93,000	-
@ 589 nM 1.59	C	Optical Transmittance, Visible Light	87%	-
- - - - - - - - - -	F	Refractive Index	1	
- - - - - - - - - -	6	@ 589 nM	1.59	-
@ 486 nM 1.604 -	1	_		-
@ 656 nM 1.585		_		-
- Velocity of Sound (in/sec) 93,000 -	l h	(alacity of Sound (in/soc)	b3 000	1