REXOLITE® 1422

Chemical Designation:	Cross linked polystyrene
DIN Abbreviation:	PS
Colour, Filler:	Clear

Rexolite® is a unique cross linked polystyrene microwave plastic with excellent electrical properties.

Main characteristics:

- Unusually stable electrical properties in Giga-herz frequency range
- Optically clear
- Virtually no water absorption
- Dimensionally stable
- Excellent sound transmission
- High radiation resistance
- Excellent sound transmission
- Negligible outgassing

Preferred fields: High frequency, microwave and radio frequency electrical engineering, Acoustic and optical lens manufacture

Applications:

- Microwave lenses
- Microwave circuitry
- Antennae
- Coaxial cables
- Connectors
- Sound transducers
- Radomes
- Missile guidance systems
- Radar windows
- Surveillance equipment
- TV satellite dishes
- Sonar lenses
- Non destructive material testing devices

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The following information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of certain properties or the suitability for a specific application. Existing commercial patents must be observed. A definitive quality guarantee is given in our general conditions of sales. Unless otherwise stated, these values represent averages taken from injection moulding samples. We reserve the right of technical alterations.

Properties	**Unit**	**Test method ASTM**	
Physical			
Density	g/cm³	D 792	1.05
Water absorption 24 hrs	%	D792	0.0008
Tensile strength	MPa	D 638	62
Flexural strength	MPa	D 638	79
IZOD notched impact	j/ m	D 253	0.63
Thermal			
Coefficient of thermal expansion	10^{-5}/K	D 696	6.84
Recommended operating temperature range	°C	D 648	-- 60 to + 100
Thermal conductivity	10^{-4} cal/cm-sec-^{0}K	C 177	3.5

Properties	**Unit**	**Test method ASTM**	
Electrical			
Dielectric strength short time 3 mm thick	V/mm	D 149	500
Dielectric constant	(1 MHz to 500 GHz	D 150	2.53
Dissipation Factor	at 1 MHz at 10 MHz at 10 GHZ	D 150	0.0012 0.00025 0.00066
Surface resistivelty at 50% RH	Ω / cm	D 257	$>10^{14}$
Volume resistivity at 50% RH	Ω / cm	D 257	$>10^{16}$
Optical and acoustic		**53 480**	**KA 3c ****
Acoustic impedance			2.5
Velocity of Sound (in /sec)			93,000
Optical transmittance, Visible ,light			87%
Refractive index	@ 589 Nm @ 486 nM @ 656 nM		1.59 1.604 1.585

ENSINGER: Production and stock programme

- Semi-finished product, finished parts, injection moulded parts and profiles in more than 500 materials and modifications.
- Engineering plastics: PA extruded or cast, POM, PC, PET, PBT, PPE, PP, PE
- High temperature plastics: PI, TPI, PEEK, PPS, PES, PPSU, PEI, PSU, PVDF, PCTFE, PTFE
- Stock length: Standard 3 metres. Cast rod and sheet 2 mts . Tube up to 3.5 mts. PE, PP, PVC, and PTFE 2 mts
- Pressed/sintered semi-finished product: PI, PEEK, PPS, PTFE/PI and modifications, as well as PCTFE in special sizes ie, large discs, tubes and rings with diameters up to about 1400 mm
- Material modifications: eg. glass, carbon and aramid fibre, talc, MoS_2, graphite, PTFE, PE, silicone oil, internal lubrication