PLEXIGLAS® Medical Resins

April 2015

ACRYLIC RESIN

As continual advances in drug design occur, medical disposable delivery systems increasingly require materials with greater chemical resistance. Simultaneously, health care providers seek devices that can perform longer, reducing the need for multiple replacements during treatments. Plexiglas® acrylic medical resins offer a history of over 30 years of outstanding performance and durability in these applications.

Our Plexiglas® acrylic medical resins have excellent scratch resistance, outstanding bonding characteristics and good optical properties.

Plexiglas® acrylic medical resins offer ease of processing and exceptional flow properties, allowing for a wide range of manufacturing processes.

Plexiglas® SG10 and Plexiglas® SG7 impact modified acrylic resins will meet some of the toughest device requirements for processing, clarity, sterilization, performance and regulatory compliance. They are engineered specifically for intricate and multi-compartment parts, making them exceptional for applications such as dialysis cassettes, IV components, drug delivery systems, and canisters.

Plexiglas® VS-UVT resin provides exceptional UV transmission and excellent transparency, making it an outstanding choice for in vitro diagnostics use. The UV transmission of is considerably higher than all non-acrylic materials. Plexiglas® VS-UVT acrylic resin provides devices with the outstanding optical properties needed for diagnostic accuracy.

Features and Benefits

- Impact resistance
- Resistance to gamma radiation
- Outstanding resistance to lipids and drug formulations
- Exceptional resistance to phthalate and non-phthalate plasticizers
- UV transmitting acrylic resins
- Excellent transparency
- Ease of processability/assembly
- Good bondability

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Typical Properties

	Test Method	Units	Plexiglas® SG7	Plexiglas® SG 10	Plexiglas® VS-UVT
Physical					
Spiral Flow	2mm channel	In. of flow	21	18	30
Melt Flow Rate (446°F/8.4 lbs)	ASTM D1238	g / 10 min	10	3.3	27.0
Specific Gravity	ASTM D792	–	1.17	1.15	1.18
Mold Shrinkage	ASTM D955	%	0.3 - 0.6	0.3 - 0.8	0.2 - 0.6
Water Absorption (24 hrs. immersion)	ASTM D570	% weight gain	0.3	0.4	0.3
Mechanical					
Tensile Strength @ Max	ASTM D638	psi	6,800	5,300	9,400
Tensile Elongation @ Break	ASTM D638	%	35	50	3
Tensile Modulus	ASTM D638	psi	355,000	270,000	420,000
Flexural Strength @ Max	ASTM D790	psi	12,400	10,300	14,000
Flexural Modulus	ASTM D790	psi	355,000	270,000	430,000
Notched Izod Impact (73°F)	ASTM D256	ft-lb/in. notch	0.6	0.9	0.3
Rockwell Hardness	ASTM D785	M	60	38	84
Thermal					
HDT (66 psi; annealed)[1]	ASTM D648	°F/°C	190 / 88	190 / 88	177 / 80
HDT (264 psi; annealed)[1]	ASTM D648	°F/°C	179 / 82	181 / 83	169 / 76
Vicat Softening Point (122°F/hr; 2.2 lbs)	ASTM D1525	°F/°C	201 / 94	199 / 93	189 / 87
Vicat Softening Point (122°F/hr; 11.2 lbs)	ASTM D1525	°F/°C	182 / 84	176 / 80	178 / 81
Thermal Conductivity	ASTM C177	BTU/hr*ft²*F/in	1.4	1.5	1.3
Optical					
Refractive Index (N_d @ 73°F)	ASTM D542	–	1.49	1.49	1.49
Luminous Transmittance (0.125")	ASTM D1003	%	91	90	92
Haze (0.125 in/3.2mm)	ASTM D1003	%	<2	<2	<1
Classification					
ASTM Classification	ASTM D788	–	PMMA 0241V4	PMMA 0231V3	PMMA 0112V7

Data given are average values and should not be used for specification purposes.
[1] - Annealing cycle for Plexiglas® SG7 and Plexiglas® SG10 is 4 hours at 176°F and for Plexiglas® VS-UVT is 4 hours at 158°F.

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