ZEON

Medical Grade Resins

ZEONEX® 5000, ZEONEX® 690R, ZEONEX® 790R, ZEONOR® 1020R have been assessed for compliance with USP Class VI <87>, <88> and <661.1> , ISO10993, EU 3.1.3 and 3.1.5, and JP 7.02. FDA Drug Master File available upon request.

Property	Test Standard	Unit	ZEONEX® 690R	ZEONEX® 790R	ZEONOR® 1020R	ZEONEX® 5000
Physical Properties						
Density	ASTM D792	kg/m³	**1.018**	**1.022**	**1.006**	**1.003**
Melt flow rate (MFR) (280 ºC, 21.18 N)	JIS K719 ISO 1133	g/10min	**16.9**	**6.7**	**19.6**	**8.4 (230 ºC)**
Water absorption (23 ºC-sat)	ASTM D570	%	**0.01**	**0.01**	**0.01**	**0.01**
Water vapor transmission (40 ºC, 90% rh, @100µm thickness)	ASTM F1249	g/(m²·day)	**1.0**	**1.1**	**1.1**	**0.8**
Oxygen transmission (23 ºC, 0% rh, @100µm thickness)	ASTM D3985	cm³/ (m²·day·atm)	**346.5**	**463.8**	**365.5**	**200.9**
Mechanical Properties						
Tensile modulus (1 mm/min)	ISO 527	kpsi	**355**	**386**	**310**	**278**
Tensile stress at yield (5 mm/min)	ISO 527	psi	**9185**	**10636**	**7514**	**6374**
Tensile stress at break (5 mm/min)	ISO 527	psi	**6937**	**7581**	**6454**	**5875**
Tensile stress (5 mm/min)	ISO 527	psi	**9185**	**10636**	**7514**	**6374**
Tensile strain at break (5 mm/min)	ISO 527	%	**61**	**43**	**89**	**140**
Flexural modulus	ISO 178	kpsi	**331**	**363**	**300**	**260**
Flexural strength	ISO 178	psi	**14649**	**16969**	**11767**	**9487**
Charpy impact strength @ 23 ºC	ISO 179/1eU	ft-lbs/in²	**61.9**	**/**	**138***	**114***
Charpy impact strength @ -20 ºC	ISO 179/1eU	ft-lbs/in²	**61.9**	**/**	**162***	**138***
Charpy impact strength @ -80 ºC	ISO 179/1eU	ft-lbs/in²	**47.6**	**/**	**90.4**	**138**
Charpy impact strength @ -194 ºC	ISO 179/1eU	ft-lbs/in²	**29.5**	**/**	**57.1**	**47.6**
Thermal Properties						
Glass transition temperature (20 ºC/min)	JIS K7121	ºC	**136.0**	**161.7**	**101.7**	**68.9**
DTUL @ 1.82 MPa	ASTM D648	ºC	**119.7**	**142.8**	**88.5**	**63.0**
Optical Properties						
Deg. of light transmission (t = 3mm)	ASTM D1003	%	**91.5**	**91.5**	**91.5**	**91.4**
Sterilization Compatibility						
Ethylene Oxide			✓	✓	✓	✓
Gamma irradiation			✓	✓	✓	✓
Steam / autoclave			✓	✓	X	X
Vaporized hydrogen peroxide			✓	✓	✓	✓

Typical properties. Not to be used for purposes of establishing specification(s).
* No break observed during testing, indicating the impact strength is greater than the value shown in the table.

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