LNP™ ELCRIN™ HPH4504HB

PC — Saudi Basic Industries Corporation (SABIC)

Product Texts

LNP ELCRIN HPH4504HB High heat polycarbonate (PC) copolymer resin is a enhanced autoclavability for medical devices and pharmaceutical applications with component synthesized from Bio source. This resin offers features, including Biocompatible (ISO10993 of USP Class VI). EtO, Steam, Gamma and e-Beam Sterilizable.

UL Yellow Card Link: E207780-104532457

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	**3**	cm³/10min	ISO 1133
Temperature	**300**	°C	-
Load	**1.2**	kg	-
ASTM Data			
Melt Flow Index, MFI	**3**	g/10min	ASTM D 1238
Temperature	**300**	°C	-
Load	**1.2**	kg	-
Mold Shrinkage, MD	**0.0075**	mm/mm	ASTM D 955

Mechanical properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	**2260**	MPa	ISO 527
Yield stress	**65**	MPa	ISO 527
Yield strain	**7**	%	ISO 527
Stress at break	**65**	MPa	ISO 527
Strain at break	**50**	%	ISO 527
Flexural modulus, 23°C	**2120**	MPa	ISO 178
Flexural strength	**66**	MPa	ISO 178
Charpy notched impact strength, +23°C	**15**	kJ/m²	ISO 179/1eA
Izod notched impact strength, +23°C	**13**	kJ/m²	ISO 180/1A
Izod notched impact strength	**11**	kJ/m²	ISO 180/1A
Temperature	**-30**	°C	-
ASTM Data			
Tensile Modulus	**2090**	MPa	ASTM D 638
Tensile Strength at Yield	**65**	MPa	ASTM D 638
Tensile Strength at Break	**71**	MPa	ASTM D 638
Elongation at Yield	**7**	%	ASTM D 638
Elongation at Break	**122**	%	ASTM D 638
Flexural Modulus	**2020**	MPa	ASTM D 790
Flexural Strength	**95**	MPa	ASTM D 790
Rockwell Hardness	**R 122**	-	ASTM D 785
Izod Impact notched, 1/8 in	**640**	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	**144**	J/m	ASTM D 256
Temperature	**-30**	°C	-
Izod Impact unnotched, 1/8 in	**3200**	J/m	ASTM D 256

Thermal properties	Value	Unit	Test Standard
ISO Data			
Temp. of deflection under load, 1.80 MPa	**132**	°C	ISO 75-1/-2
Vicat softening temperature, B	**154**	°C	ISO 306
Coeff. of linear therm. expansion, parallel	**60**	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	**60**	E-6/K	ISO 11359-1/-2
Burning behav. at 1.5 mm nom. thickn.	**HB**	class	IEC 60695-11-10
Thickness tested	**1.5**	mm	-
Yellow Card available	**yes**	-	-
ASTM Data			
UL 94 Flame rating	**HB**	-	UL 94
Thickness tested	**1.5**	mm	-
Coefficient of Thermal Expansion, MD	**60**	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	**60**	E-6/K	ASTM D 696
DTUL @ 264 psi	**143**	°C	ASTM D 648

Vicat Temperature	**160**	°C	ASTM D 1525
Thermal Conductivity, solid state	**0.21**	W/(m K)	ASTM C 177
Specific Heat	**1.26**	J/(kg K)	ASTM C 351

Electrical properties	**Value**	**Unit**	**Test Standard**
ASTM Data			
Dielectric Strength, Short Time	**20.3**	kV/mm	ASTM D 149
Dissipation Factor, 60 Hz	**0.0012**	-	ASTM D 150
Dielectric Constant, 60 Hz	**3.15**	-	ASTM D 150
Dielectric Constant, 1 MHz	**3**	-	ASTM D 150
Volume Resistivity	**2.6E17**	Ohm*cm	ASTM D 257

Optical properties	**Value**	**Unit**	**Test Standard**
ASTM Data			
Haze	**1**	%	ASTM D 1003
Light Transmittance	**85**	%	ASTM D 1003
Index of Refraction	**1.6**	-	ASTM D 542

Other properties	**Value**	**Unit**	**Test Standard**
Water absorption	**0.16**	%	Sim. to ISO 62
Humidity absorption	**0.35**	%	Sim. to ISO 62
Density	**1200**	kg/m³	ISO 1183
Water Absorption, 24hr	**0.16**	%	ASTM D 570
Density	**1190**	kg/m³	ASTM D 792

Processing Recommendation Injection Molding	**Value**	**Unit**	**Test Standard**
Pre-drying - Temperature	**120**	°C	-
Pre-drying - Time	**3 - 4**	h	-
Processing humidity	**≤0.02**	%	-
Melt temperature	**340 - 360**	°C	-
Mold temperature	**80 - 115**	°C	-
Zone 1	**315 - 340**	°C	-
Zone 2	**325 - 350**	°C	-
Zone 3	**340 - 360**	°C	-
Nozzle temperature	**330 - 355**	°C	-
Screw speed	**40 - 70**	rpm	-
Back pressure	**0.3 - 0.7**	MPa	-

Characteristics

Processing
Injection Molding

Special Characteristics
Heat stabilized or stable to heat, Sterilizable, Steam sterilization, Gamma irradiation sterilization, Electron beam (e-beam) sterilization

Features
Copolymer

Chemical Resistance
Radiation Resistance

Certifications
Medical Grade, Biocompatibility ISO 10993, US Pharmacopeia Class VI Approved

Applications
Aircraft and Aerospace, Medical

Regional Availability
North America, Europe, Asia Pacific, South and Central America