



HexPly® ES/EH84

120 °C (250 °F) curing epoxy matrix

Product Data

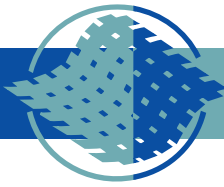
Description

HexPly® ES/EH84 matrix is a structural epoxy resin for tubular parts designed for low pressure curing in the manufacture of sports goods and for industrial applications. It is ideal for the following processes - shrink wrap tape, vacuum bag, press and autoclave manufacturing methods.

- HexPly® ES84 is supplied with fabric reinforcement
- HexPly® EH84 is a UD tape

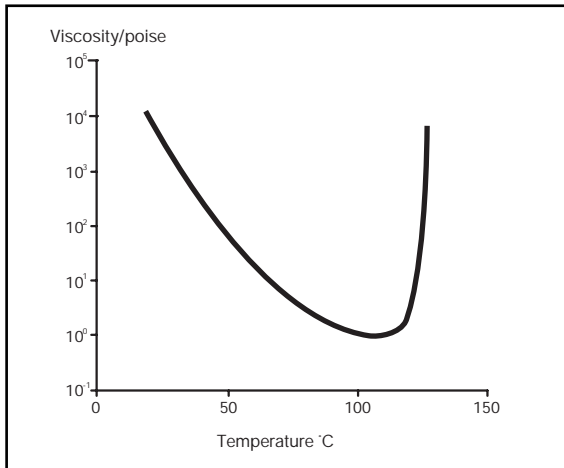
Benefits and Features

- Maximum service temperature 85 °C (185 °F)
- Low exotherm
- Low pressure moulding
- Good surface aspect
- Low viscosity
- Low density
- Versatile cure process 100-140 °C (212-285 °F)
- Good flexibility

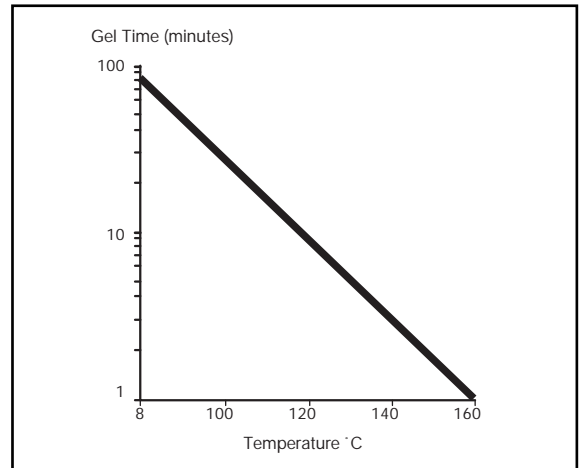


Resin Matrix Properties

Rheology



Gel Time



Cured Matrix Properties cured at 180 °C (350 °F)

		Method
Tensile strength	55 MPa (8 Ksi)	ISO R527
Tensile modulus	3 GPa (435 Ksi)	ISO R527
Strain	2.1 %	ISO R527
Glass transition temperature	95 °C (203 °F)	DMA
Cured resin density	1.2 g/cm ³	

Prepreg Curing Conditions

The ideal cure cycle is 90 min at 120 °C (250 °F), at a pressure between 0.8 and 7 bar (11-102 Psi). Alternative cure cycles can be used:

Temperature	Time(min)
100 °C (212 °F)	150
120 °C (250 °F)	90
140 °C (284 °F)	20

Heat up rate 0.5-10°C (33-50 °F)/min

Typical Mechanical Properties on HexPly® ES/EH84 prepregs

Main references (Others available)

TEST	E-glass Balanced fabric 390 g/m²	Aramid Balanced fabric 175 g/m²
0° Tensile strength MPa (Ksi)	600 (87)	600 (87)
0° Tensile modulus GPa (Msi)	21 (3.04)	32 (4.64)
0° Flexure strength MPa (Ksi)	700 (101)	380 (55)
0° Flexure modulus GPa (Msi)	20 (2.9)	21 (3)
0° Compression strength MPa (Ksi)	540 (78)	240 (35)
0° Short beam strength MPa (Ksi)	60 (8.7)	35 (5)
Fibre volume content %	50	50

TEST	HS 12k carbon UD tape supported S25 150 g/m²	HS 12k carbon UD tape NS 150 g/m²	IM 12k carbon UD tape 150 g/m²	HM 12k carbon UD tape 110 g/m²
0° Tensile strength MPa (Ksi)	1900 (275)	2000 (290)	2300 (333)	1750 (253)
0° Tensile modulus GPa (Msi)	124 (18)	130 (18.8)	170 (24.6)	210 (30.4)
0° Flexure strength MPa (Ksi)	2000 (290)	2000 (290)	1750 (253)	1300 (188)
0° Flexure modulus GPa (Msi)	116 (16.8)	120 (17.4)	155 (22.4)	185 (26.8)
0° Compression strength MPa (Ksi)	1250 (181)	1200 (174)	1250 (181)	1100 (159)
0° Short beam strength MPa (Ksi)	80 (11)	85 (12.3)	80 (11.6)	80 (11.6)
Fibre volume content %	60	60	60	60

HS = carbon high strength
NS = no supported

HM = carbon high modulus

IM= carbon intermediate modulus



Prepreg Storage Life

■ Tack Life @ 23 °C (73 °F) 30 days

■ Guaranteed Shelf Life @ -18 °C (0 °F) 14 months

■ Storage conditions

HexPly® ES/EH84 prepregs should be stored as received in a cool dry place or in a refrigerator. After removal from refrigerator storage, prepreg should be allowed to reach room temperature before opening the polythene bag, thus preventing condensation (a full reel in its packaging can take up to 48 hours).

Important

All information is believed to be accurate but is given without acceptance of liability. Users should make their own assessment of the suitability of any product for the purposes required. All sales are made subject to our standard terms of sale which include limitations on liability and other important terms.

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For More Information

Hexcel is a leading worldwide supplier of composite materials to aerospace and other demanding industries. Our comprehensive product range includes:

- Carbon Fibre
- RTM Materials
- Honeycomb Cores
- Continuous Fibre Reinforced Thermoplastics
- Carbon, glass, aramid and hybrid prepregs
- Reinforcement Fabrics
- Structural Film Adhesives
- Honeycomb Sandwich Panels
- Special Process Honeycombs

For US quotes, orders and product information call toll-free 1-800-688-7734

For other worldwide sales office telephone numbers and a full address list please go to:

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