HexPly® 914

175°C curing epoxy matrix

Product Data Sheet

Description

HexPly® 914 is a highly successful modified epoxy matrix which is used extensively in high temperature resistant primary aircraft structures. The controlled melt viscosity and excellent matrix rheology of HexPly® 914 permits a wide range of processing conditions for high quality components.

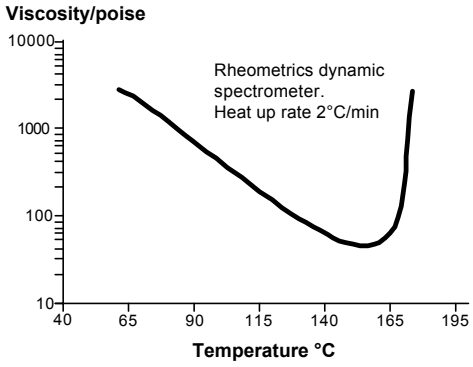
Benefits and Features

- High melt viscosity giving easy processing characteristics
- Tolerant to a wide variation of processing conditions
- Latitude for low to high pressure laminating or moulding processes
- Medium tack level giving excellent drape characteristics
- Good shelf life

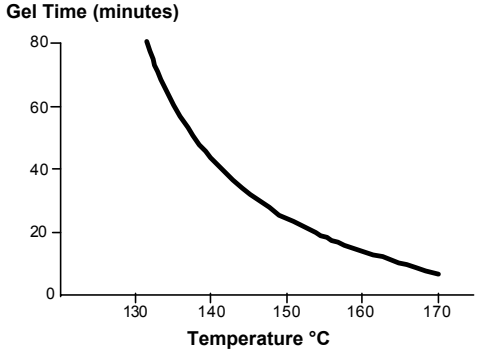
HexPly® 914 is easily processed by press or autoclave for optimum composite properties and is also suitable for vacuum-bag cure of high quality thin components.

Resin Matrix Properties

Rheology



Gel Time



Prepreg Curing Conditions

1 hour at 175°C and 700kN/m^2 (7 bar) pressure plus 4 hours postcure at 190°C.

Heat up rate 2°C to 5°C.

Components up to 2 mm thick can be cured without a dwell in the cure schedule, provided a maximum heat up rate of 2°C/minute is used. For thicker components a dwell temperature between 120-135°C is recommended to avoid the possibility of an exotherm in the matrix. (Thicker components need longer dwells at the lower temperature).

Cured Matrix Properties (cured at 175°C)

		Method
Tensile strength	47.7 MPa	ISO R527 type 1
Tensile modulus	3.9 GPa	ISO R527 type 1
Tensile strain	1.5%	ISO R527 type 1
Poisson's ratio	0.41	ISO R527 type 1
Calculated shear modulus	1.40 GPa	ISO R527 type 1
Compression strength	180 MPa	ISO 604
Toughness K_{1C}	0.7 MPa ÷m	Tested in accordance with EGF Task Group on Polymers and Composites protocol.
Toughness G_{1C}	103 J/m^2	
Glass transition temperature (Tg)	190°C	DMTA
Cured density	1.29 g/cm^3	

Prepreg Storage Life

- Tack Life @ 23°C 60 days
- Guaranteed Shelf Life @ -18°C 19 months (maximum from date of manufacture)
- Storage conditions.

HexPly® 914 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).

Precautions for Use

The usual precautions when handling uncured synthetic resins and fine fibrous materials should be observed, and a Safety Data Sheet is available for this product. The use of clean disposable inert gloves provides protection for the operator and avoids contamination of material and components.

For more information

Hexcel is a leading worldwide supplier of composite materials to aerospace and industrial markets.
Our comprehensive range includes:

- HexTow® carbon fibers
- HexForce® reinforcements
- HiMax® multiaxial reinforcements
- HexPly® prepregs
- HexMC®-i molding compounds
- HexFlow® RTM resins
- HexBond™ adhesives
- HexTool® tooling materials
- HexWeb® honeycombs
- Acousti-Cap® sound attenuating honeycomb
- Engineered core
- Engineered products
- Polyspeed® laminates & pultruded profiles
- HexAM® additive manufacturing

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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