



# HexPly® M90

## 110°C Fast Curing Low Pressure Epoxy Matrix



### Product Data Sheet

#### Description

HexPly® M90 is a hot melt, thermosetting, high tack epoxy resin matrix, specifically designed for prepreg applications for which short cure cycles from 100°C and above, and low pressure are required. M90 can be used for the manufacture of a large range of aerospace components, suitable for the cure of thin and thick sections. M90 exhibits a long out-life at ambient conditions.

#### Resin Matrix Properties

##### Dynamic Thermal Properties by DSC (ISO 11357-5)

(Cure -40 to 270°C @ 10°C/min) <sup>(1)</sup>

Uncured T<sub>g</sub>: 1 – 9°C  
T<sub>Onset</sub>: 126 – 136°C  
T<sub>Peak</sub>: 139 – 149°C  
Enthalpy: 240J/g +/-25%

<sup>(1)</sup> Data obtained from neat resin upon delivery

#### Time to reach 95% degree of cure per temperature

Temperature	Cure Time (95%) <sup>(2)</sup>	Tolerance
100°C	70min	+/-15min
110°C	45min	+/-10min
120°C	33min	+/-7min

<sup>(2)</sup> Time to 95% conversion (ISO 11357-5), total scan time 120min

- Density (ISO1183-1): 1.10 – 1.22 g/cm<sup>3</sup>
- Color: Off white - Yellowish
- Tack: High
- Glass transition temperature, Tg Dry: 135°C – Tg Onset Log scale, following EN 6032
- Glass transition temperature, Tg Wet: >100°C – Tg Onset Log scale, following EN 6032  
(70°C/85%RH to saturation)



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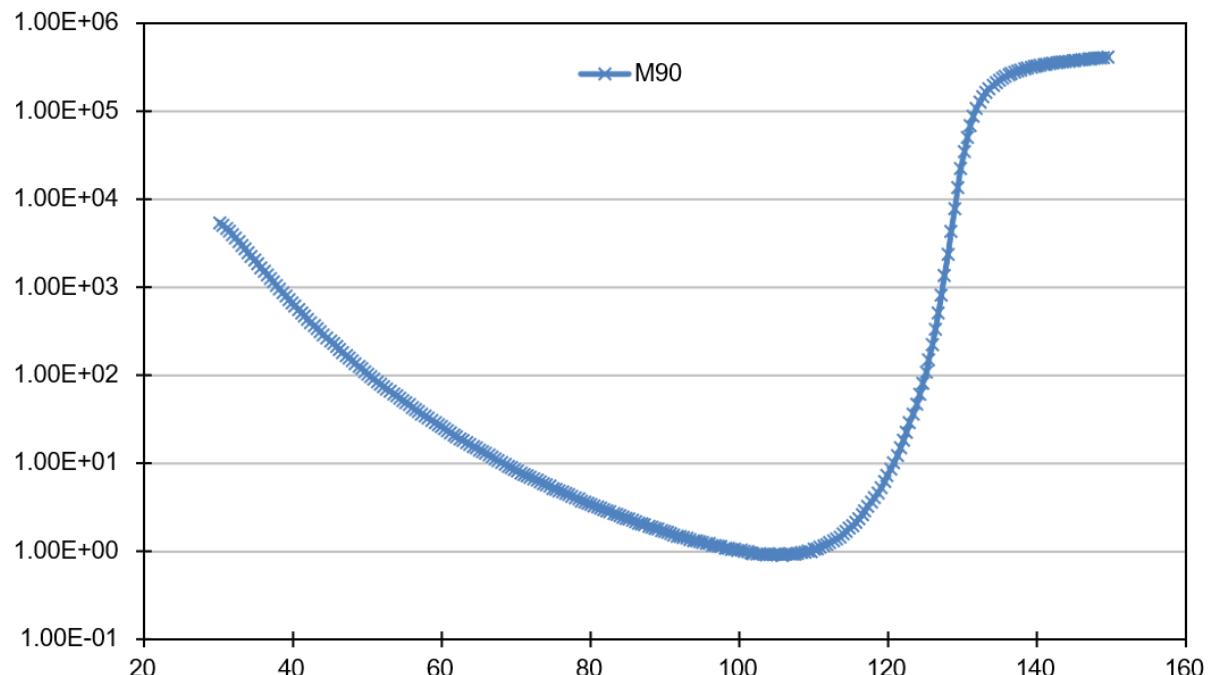


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#### Typical Viscosity Profile

(Data obtained from plate-plate rheometry, temperature run in reference to ISO 6721-10; Representative for a selected, single batch.)

#### Dynamic Complex Viscosity of HexPly® M90 @2°C/min



#### Storage and Handling

Store sealed in dry conditions and in the absence of direct sunlight.

- Out Life<sup>1</sup>: 6 weeks @ +23°C
- Shelf Life<sup>2</sup>: 18 months @ -18°C
- Alternative Shelf Life<sup>3</sup>: 6 months @ +5°C

<sup>1</sup>Out Life: the maximum accumulated time allowed at room temperature between removal from the freezer and cure. Out life is in addition to Shelf life.

<sup>2</sup>Shelf Life: the maximum storage life for HexPly® prepreg, after date of manufacture, when stored continuously, in a sealed moisture-proof bag, at -18°C/0°F. To accurately establish the exact expiration date, refer to the box label. Out life can be added to it.

<sup>3</sup>Alternative shelf life: maximum storage life for HexPly® prepreg, after date of manufacture, when stored continuously, in a sealed moisture-proof bag, at +5°C. Out life can be added to it.



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#### Typical Curing Conditions

- Recommended heat-up rate: 0.5 – 5°C/min
- Recommended cure cycle\*: 25 – 70°C @1°C/min, 60min @70°C, 70 – 120°C @1°C/min, 60min @120°C
- Pressure gauge: 0.5 – 5 bar

\*Intermediate dwell optional

Dependent on the application, alternative cure temperatures than the ones from 100°C – 120°C might be applied but degree of conversion and cured Tg can deviate from stated ranges. The optimum cure cycle, heat-up rate and dwell period is dependent on component size, layup construction, oven capacity and thermal mass of tool.

#### Precautions for Use

HexPly® M90 is exclusively available in prepreg formats (UD & woven) and a Safety Data Sheet can be provided for this product. The usual precautions when handling uncured synthetic resins and fine fibrous materials should be observed. 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® prepgres
- HexAM® additive manufacturing
- HexMC®-i molding compounds
- HiFlow® RTM resins
- HexBond® adhesives
- HexTool® tooling materials
- HexWeb® honeycomb
- Acousti-Cap® sound attenuating honeycomb
- Engineered core
- Engineered products
- Polyspeed® laminates & pultruded profiles

For U.S. 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:

<http://www.hexcel.com/contact>

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