



HexPly[®] M79 / M79-LT

Low Temperature Curing Epoxy Resin Matrix for Prepregs



Product Data Sheet

Description

HexPly[®] M79/M79-LT is a hotmelt, thermosetting, low-exothermic epoxy resin matrix, specifically designed for prepreg applications at which short cure cycles below 100°C are required. M79/M79-LT can be used for manufacture of large industrial components, suitable for cure of thin and thick sections. M79/M79-LT exhibits a long out-life of 8 weeks at ambient conditions. M79 is supplied as moderate tack and M79-LT as low tack resin matrix.

Resin Matrix Properties

Dynamic Thermal Properties by DSC (ISO 11357-5)

(cure -40 to 270°C @10°C/min) ⁽¹⁾

Uncured T_g: 2 – 10°C (M79)

6 – 14°C (M79-LT)

T_{Onset}: 114 – 125°C

T_{Peak}: 140 – 150°C

Enthalpy: 50 – 150J/g

(1) Data obtained from neat resin upon delivery

Isothermal Cure Properties by DSC

Temperature	Cure Time (95%) ⁽²⁾
70°C	≤480min
75°C	≤360min
80°C	≤240min
90°C	≤130min
100°C	≤75min
110°C	≤60min
120°C	≤60min

(2) time to 95% conversion (ISO 11357-5), total scan time 120min

- Typical cured T_g: 95°C +/-5°C (following a 130min cure @90°C) ⁽³⁾
- Optimum cured T_g: 105°C +/-5°C (following a 120min cure @110°C) ⁽³⁾

(3) according to ISO 11357-2 using a 10°C/min ramp rate, -40 to 270°C

- Density (ISO1183-1): 1.1 – 1.2g/cm³
- Color: Off white - Yellowish
- Tack: Moderate/Low



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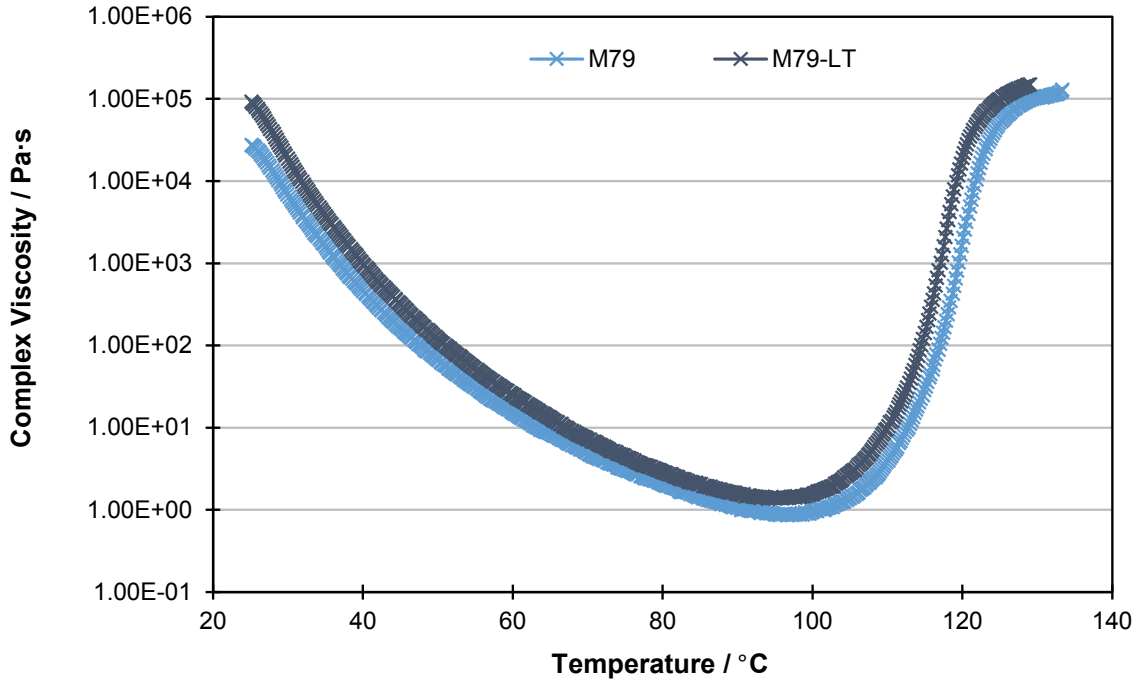


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Typical Viscosity Profile

(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[®] M79 / M79-LT @ 2°C/min





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Shelf Life ⁽⁴⁾

(Stored sealed, in dry conditions and in absence of direct sunlight)

@ +30°C	3 weeks
@ +23°C	8 weeks
@ +5°C	6 months
@ -18°C	18 months

(4) Shelf Life refers to the minimum time at given temperature after which the resin is being impaired in its thermal or rheological properties. An increase in uncured T_g above NTP temperature limitation (NIST) defines the end of shelf-life of the resin matrix.

Typical Curing Conditions

- Recommended heat-up rate: 0.5 – 5°C/min
- Recommended cure cycle: 25 – 90°C @1°C/min, 300min @90°C
- Pressure gauge: 0.5 – 5bar

Dependent on the application, alternative cure temperatures than the ones from 70°C – 120°C might be applied but degree of conversion and cured T_g 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.



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Precautions for Use

HexPly[®] M79/M79-LT is exclusively available in prepreg or semipreg format 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
- HexPly[®] prepregs
- HexMC[®] molding compounds
- HexFlow[®] RTM resins
- Redux[®] adhesives
- HexTool[®] tooling materials
- HexWeb[®] honeycombs
- Acusti-Cap[®] sound attenuating honeycomb
- Engineered core
- Engineered products

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:

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

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