Description
HexPly® M77CS is a fast curing hotmelt, thermosetting epoxy matrix, specifically designed for prepreg applications at which short cure cycles and clear surfaces are required. M77CS is recommended for curing at 120 – 150°C and is suitable for a range of pressures (5 – 35bar). M77CS can be used for manufacture of industrial components with a clear surface.

Resin Matrix Properties
Dynamic Thermal Properties by DSC (ISO 11357-5)
(cure -40 to 270°C @10°C/min) (1)
Uncured Tg: 1 – 9°C
TOnset: 123 – 131°C
TPeak: 135 – 143°C
Enthalpy: 340J/g +/-20%
(1) Data obtained from neat resin upon delivery

Isothermal Cure Properties by DSC
Temperature   Cure Time (95%) (2)
120°C         ≤9min
130°C         ≤6min
140°C         ≤3min
150°C         ≤1.5min
(2) time to 95% conversion (ISO 11357-5), total scan time 15min @120 – 140°C, 2min @150°C

Optimum cured Tg: 130°C +/-5°C (following a 15min cure @130°C) (3)
(3) according to ISO 11357-2 using a 10°C/min ramp rate, -40 to 270°C; based on 95% conversion

- Density (ISO 1183-1): 1.15 – 1.25g/cm³
- Color: Translucent/Off white
- Tack: Moderate
**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® M77CS @ 5°C/min**

![Graph showing the dynamic complex viscosity of HexPly® M77CS at 5°C/min](image)
HexPly® M77CS
fast curing epoxy resin matrix for prepregs

Shelf Life

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

@ +23°C  6 weeks
@ +5°C  6 months
@ -18°C  18 months

(4) Shelf Life refers to the maximum time at given temperature after which the resin is being impaired in its thermal or rheological properties from date of manufacture. An increase in uncured Tg 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:  15min @130°C
● Pressure gauge:  5 – 35bar

Dependent on the application, alternative cure temperatures than the ones from 120 – 150°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® M77CS 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.