

EPMOLD 220LV

High-temperature epoxy resin

Product description

EPMOLD 220LV is an epoxy tooling resin comprising a specially formulated resin and hardener, with an initial cure at room temperature or low heat. Subsequent post-cure develops excellent heat resistance and mechanical properties. It is suitable for fiber-reinforced laminates, surface layers and filled casting backings in tooling manufacture.

Key features

- Low mixed viscosity, fast vacuum infusion and easy processing
- Long working time and easy processing
- Initial room-temperature or low-temperature heat cure
- High heat resistance; Tg can reach 220°C after post-cure

Physical properties

Property	Test method	EPMOLD 220LV Resin	EPMOLD 220LV Hardener
Mix ratio by weight		100	40
Appearance	Visual inspection	Liquid	Liquid
Color	Visual inspection	Yellow	Colorless to pale yellow
Brookfield viscosity at 25°C (mPa.s)	BROOKFIELDLVT	3200	12
Mixed viscosity at 25°C (mPa.s)	BROOKFIELDLVT	290	
Density before mixing at 25°C (g/cm3)	ISO1675:1985	1.2-1.22	0.94-0.96
Density after curing at 25°C (g/cm3)	ISO2781:1996	1.16-1.18	
Working time (500g) at 25°C	Digital thermometer	203 minutes	

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Mechanical properties

Test item	Test method	EPMOLD220LV
Hardness	ISO868:1985	Shore D 87
Flexural modulus	ISO178:2001	2.6-3.0GPa
Flexural strength	ISO178:2001	>110MPa
Tensile modulus	ISO527:1993	2.3-3.2GPa
Compressive strength	ISO604:2002	>100MPa
Coefficient of thermal expansion	ISO11359-2:1999	66*10-6K-1

Test item	Test method	EPMOLD220LV
Glass transition temperature Tg	ISO11357:2002(DSC)	220°C

* Cure conditions: the data above are based on testing after post-curing at 60°C*4h+100°C*2h+150°C*2h+200°C*8h.

Processing instructions

Weigh resin and hardener in the correct ratio, mix thoroughly and infuse. Use within the first 2/3 of the working time to avoid excessive viscosity or increased risk. Note: working time varies with mixed quantity, material temperature and ambient temperature; testing before infusion is essential. After infusion, cure for 8 hours at room temperature, 25°C, followed by 12 hours at 40°C, then cool to room temperature at 20°C per hour before demolding. To minimise shrinkage and distortion and improve heat resistance, apply a suitable post-cure after demolding, using supports for complex structures. Heat gradually at no more than 20°C per hour, following the schedule 2 hours at 60°C + 2 hours at 80°C + 2 hours at 100°C + 2 hours at 120°C + 2 hours at 160°C + 8 hours at 180°C. Cool to room temperature at 20°C per hour.

Packaging

EPMOLD220LV Resin	EPMOLD220LV Hardener
220kg	180kg
20kg	19.2kg

Storage

In unopened containers stored dry and well ventilated at 15-25°C, the resin has a shelf life of 12 months and the hardener 12 months.

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Store resin and hardener dry at 15-25°C to prevent crystallisation. Prolonged low-temperature storage may cause crystallisation; heat to 50-60°C until the material becomes a clear, transparent liquid. This heating does not affect performance. After using the hardener, blanket the container with nitrogen or dry air and close the lid tightly to prevent moisture-induced discoloration. Use any remaining material as soon as possible.

Safety precautions

Avoid skin contact during handling. Wear protective clothing, a mask and protective gloves as necessary, and work in a well-ventilated area. Refer to the material safety data sheet for further information.

Notes

All data above were measured under specified conditions. As actual processing methods and other factors may affect performance, customers should conduct the necessary tests before use to confirm suitability for their application. We guarantee that our products meet our quality specifications.

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US customary-unit equivalents

US customary-unit equivalents are provided for convenience alongside the original SI test data. The original source values and test methods remain the controlling reference. Converted values are rounded.

Source value	US equivalent
220 °C	428 °F
25 °C	77 °F
500 g	1.102 lb
2.6-3.0 GPa	377.1 to 435.1 ksi
110 MPa	15954 psi
2.3-3.2 GPa	333.6 to 464.1 ksi
>100 MPa	>14504 psi
60 °C	140 °F
100 °C	212 °F
25 °C	77 °F
40 °C	104 °F
20 °C	68 °F
80 °C	176 °F
120 °C	248 °F
160 °C	320 °F
180 °C	356 °F
220 kg	485 lb
180 kg	396.8 lb
20 kg	44.1 lb
19.2 kg	42.3 lb
15-25 °C	59 to 77 °F
50-60 °C	122 to 140 °F