

Source clarification required: the second EPMOLD 220 viscosity plot is labelled as viscosity versus time, but its horizontal axis shows temperature and repeats the preceding temperature plot. The original plots and the separate pot-life data are retained. Confirm the time-dependent behaviour with EPTEK.

EPMOLD 220

High-temperature epoxy tooling resin

Product description :

EPMOLD 220 is an epoxy resin comprising a specially formulated resin and hardener, with an initial cure at room temperature or low heat. After demoulding, a high-temperature post-cure develops excellent heat resistance and mechanical properties. It is suitable for manufacturing composite moulding tools, including tools for vacuum infusion and prepreg lay-up.

Key features :

- Low mixed viscosity for easy vacuum infusion • Initial cure at room temperature or low heat, reducing the heat-resistance requirement for the master
- Good wet-out of glass and carbon fibres • Long working time allows thorough fibre impregnation
- High heat resistance; Tg can reach 230°C after post-cure

Physical properties :

Property	Test method	EPMOLD220 Resin	EPMOLD220 Hardener
Mix ratio by weight		100	48
Appearance	Visual inspection	Liquid	Liquid
Colour	Visual inspection	Yellow	Colourless to pale yellow
Density before mixing at 25°C (g/cm ³)	ISO1675:1985	1.20-1.22	0.95
Viscosity at 25°C (mPa.s)	BROOKFIELDLVT	2500-3500	25-30
Mixed viscosity (mPa.s)	BROOKFIELDLVT	400-500	
Working time of a 500g mix (minutes)		150-180	

Mechanical properties :

Test item	Test method	EPMOLD220
Hardness	ISO868:1985	Shore D 87
Flexural modulus	ISO178:2001	2.5-3.5GPa
Flexural strength	ISO178:2001	120-130MPa
Tensile strength	ISO527:1993	55-70MPa
Compressive strength	ISO604:2002	>110MPa
Glass transition temperature Tg (220°C/6 hours)	ISO11357:2002(DSC)	230°C

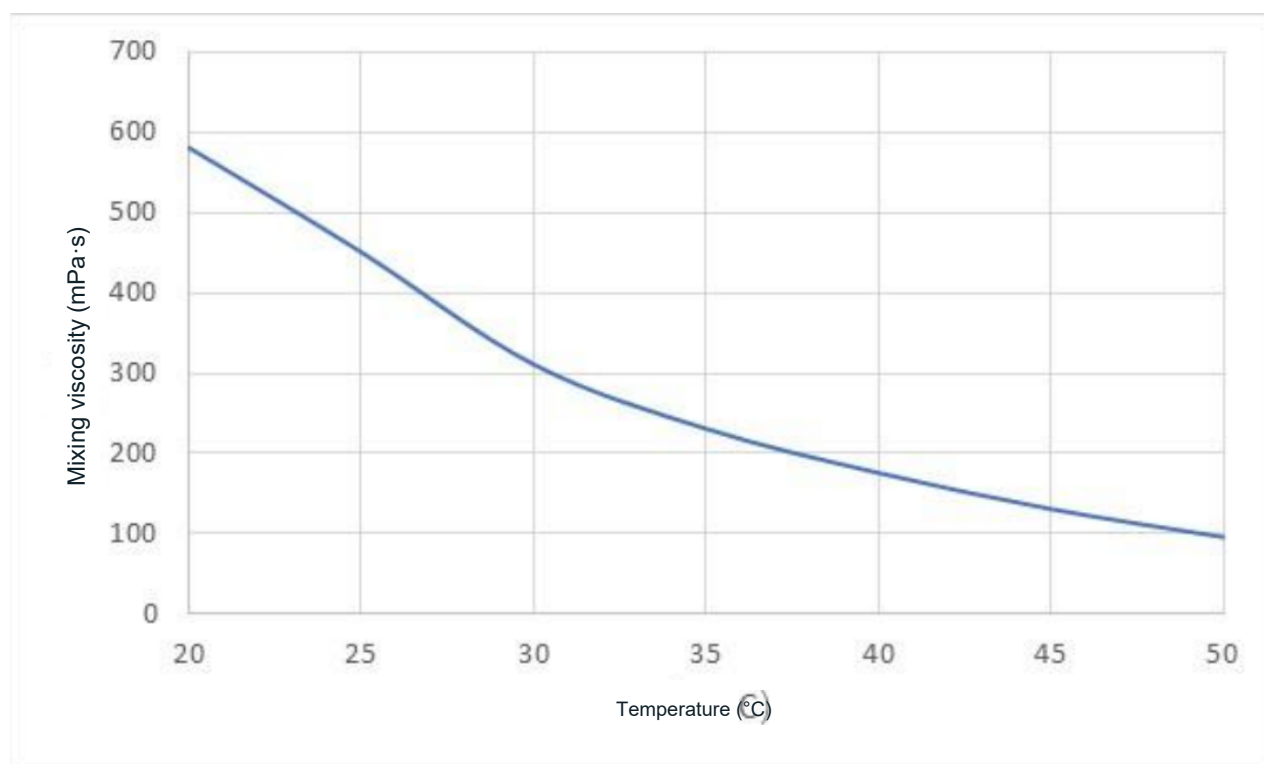
* Specimen cure conditions: the data above are based on testing after post-curing at 60°C*2h+100°C*2h+160°C*2h+200°C*2h+220°C*6h.

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Mixed viscosity :

Mixed viscosity of EPMOLD 220 resin as a function of temperature

Brookfield rotational viscometer; mixed quantity: 180g

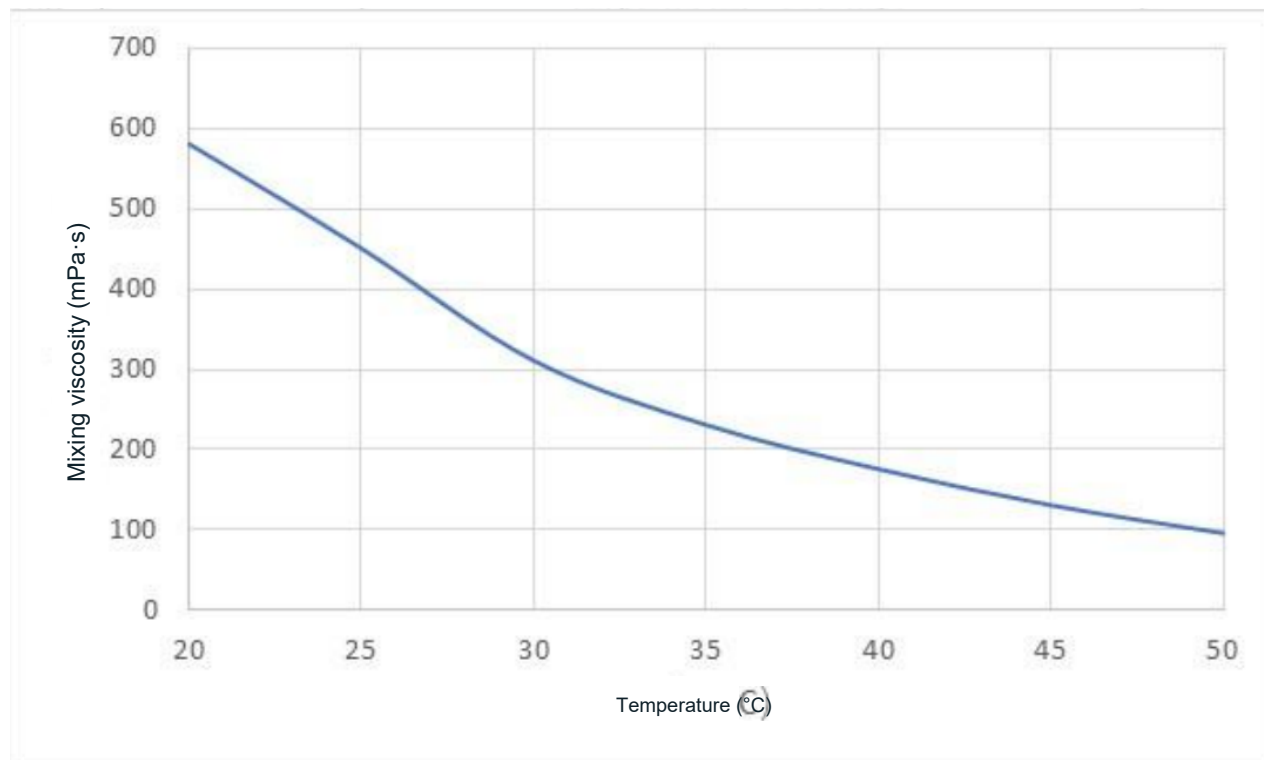


Mixing viscosity (mPa·s)

Temperature (°C)

Mixed viscosity of EPMOLD 220 resin as a function of time

Brookfield rotational viscometer; constant temperature 25°C; mixed quantity: 180g



Mixing viscosity (mPa.s)

Temperature (°C)

Time for EPMOLD220 resin viscosity to double	
Initial mixed viscosity at 25°C	450mPa.s
Time for viscosity to double	4.5 hours

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Processing and curing instructions :

Weigh resin and hardener in the correct ratio, mix thoroughly and vacuum-degas. Use within the first 2/3 of the working time to avoid excessive viscosity or increased risk. Note: viscosity rise varies with mixed quantity, material temperature and ambient temperature; conduct a verification test before infusion. After infusion, cure for 8 hours at room temperature, 25°C, followed by 8 hours at 80°C, then cool to room temperature at 20°C per hour before demoulding. To improve the cured resin's heat resistance, apply a suitable post-cure after demoulding. Support complex structures to avoid distortion during post-cure. Heat gradually at no more than 20°C per hour, following the schedule 2 hours at 100°C + 2 hours at 120°C + 2 hours at 140°C + 2 hours at 160°C + 2 hours at 180°C + 2 hours at 200°C + 4 hours at 220°C. Cool to room temperature at no more than 20°C per hour.

Packaging :

EPMOLD220 Resin	EPMOLD220 Hardener
200kg	180kg
20kg	19.2kg

Storage :

Resin and hardener have a shelf life of 12 months when sealed in unopened containers. Store both dry at 15-25°C to prevent crystallisation. Prolonged low-temperature storage may cause resin crystallisation; heat to 50-60°C until the material becomes a clear, transparent liquid. This heating does not affect performance. Allow the resin to return to room temperature before use. Promptly reseal any unused hardener to prevent moisture-induced oxidation and deterioration.

Storage :

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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