

EPLAM 120 Resin

EPLAM 120 Hardener

Epoxy tooling resin for hand lay-up

Product description :

EPLAM 120 is a room-temperature-curing epoxy tooling resin for hand lay-up, comprising a specially formulated epoxy resin and hardener. Following an initial room-temperature cure and low-temperature post-cure, it provides good heat resistance and mechanical properties. It is suitable for fiber-reinforced laminates, surface layers and filled casting backings in tooling manufacture.

Key features :

- Suitable application viscosity; resists sagging after hand lay-up.
- Rapid gelation and short demolding time after cure; suitable for moderate to low ambient temperatures.
- Room-temperature or low-temperature heat cure.
- Good mechanical properties, toughness and heat resistance.
- Good wet-out of glass and carbon fibers; suitable for thick laminates.

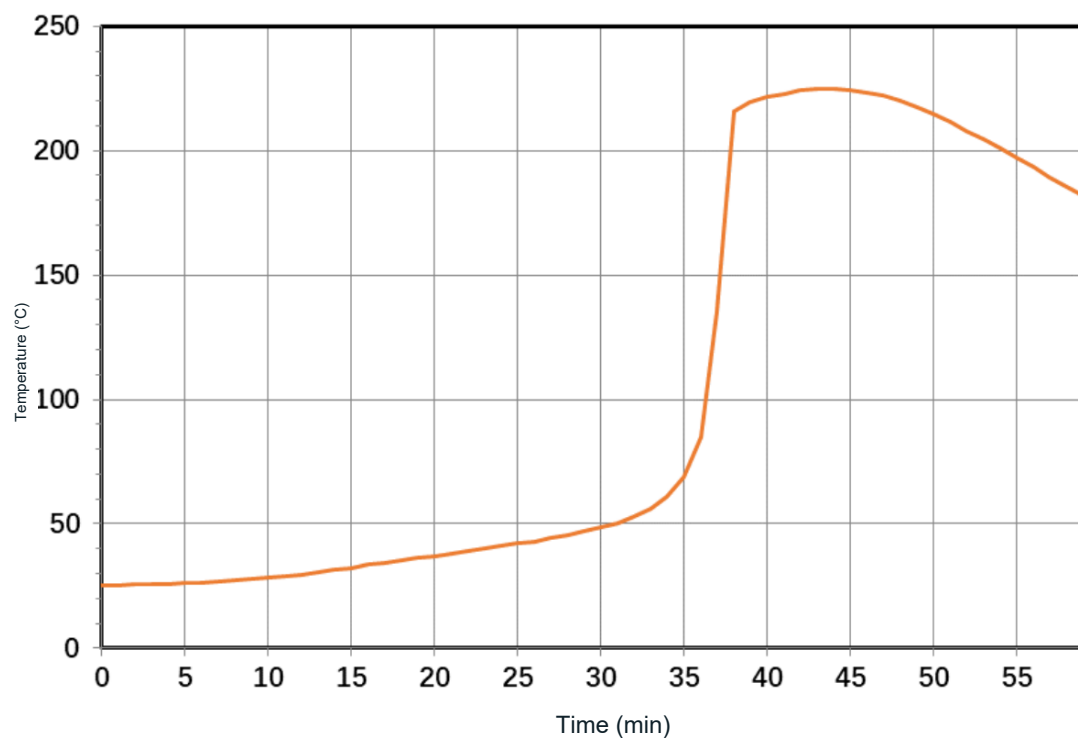
Physical properties :

Property	Test method	EPLAM 120 Resin	EPLAM 120 Hardener
Mix ratio by weight		100	18
Appearance	Visual inspection	Liquid	Liquid
Color	Visual inspection	Pale amber liquid	Brown liquid
Brookfield viscosity at 25°C (mPa.s)	ASTM D 445	1,400-1,800	100-140
Mixed viscosity at 25°C (mPa.s)	ASTM D 445	600-750	
Density before mixing at 25°C (g/cm3)	ASTM D 4052	1.10-1.18	1.00-1.06
Cured density at 25°C (g/cm3)	ASTM D 4052	1.16 -1.20	
Working time (118 g) at 25°C (minutes)	Gel timer	35-50 minutes	

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Exotherm curve :

Exotherm curve for EPLAM 120 mixed at a material temperature of 25°C, with a total quantity of 100 g and an ambient temperature of 25°C.



Temperature (°C)

Time (min)

Mix ratio	100 : 18
Time to peak exotherm (minutes)	44
Peak exotherm temperature (°C)	225

Mechanical properties :

Test item	Test method	EPLAM 120
Hardness	ASTM D 2240-05	Shore D 83
Flexural modulus	ASTM D 790	2.5-3.5 GPa
Flexural strength	ASTM D 790	120-135 MPa
Tensile modulus	ASTM D 638	2.5-3.5 GPa
Tensile strength	ASTM D 638	70-85 MPa
Elongation at break	ASTM D 638	> 4%
Compressive strength	ASTM D 695	>80 MPa
Glass transition temperature Tg	ASTM D 3418 (DSC)	121 °C

Cure conditions: the data above are based on testing after 8 hours at room temperature and 36h at 105°C.

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Processing instructions :

Weigh resin and hardener in the correct ratio, mix thoroughly and apply by hand lay-up. Use the mixture within the first 2/3 of its working time to avoid excessive viscosity or increased processing risk. Note: working time varies with mixed quantity, material temperature

and ambient temperature; testing before use is essential. Weigh resin and hardener in the correct ratio, mix thoroughly before use, and use within the first 2/3 of the working time to avoid excessive resin viscosity or increased risk.

For laminating :

Select a suitable hardener for the size and complexity of the part, mix it thoroughly with the resin, and impregnate the reinforcement using an appropriate method.

For surface gelcoat application :

Mix resin and hardener, add filler to achieve the required viscosity, and brush onto the prepared intermediate mold surface (first

buff the wax release agent).

For filled casting backings :

Mix resin and hardener thoroughly in the correct ratio, add the appropriate filler (aluminum powder, sand or another filler) for the application, mix thoroughly and compact onto the laminate.

After hand lay-up, cure for 24 hours at room temperature before demolding, or cure for 16 hours at room temperature followed by

6 hours at 60°C; cool to room temperature at 20°C per hour before demolding. To minimise mold shrinkage and distortion and improve heat resistance, apply a suitable post-cure after demolding,

using supports for complex structures. During post-cure, heat gradually at no more than 20°C per hour, hold for 2 hours at 50°C + 8 hours at 80°C, then cool to room temperature at 20°C per hour.

Packaging :

EPLAM 120 Resin	EPLAM 120 Hardener
1,000kg / IBC	200kg / steel drum
220kg / steel drum	20kg / drum

Storage :

Store resin and hardener dry at 15°C-25°C to prevent crystallisation. Prolonged low-temperature storage may cause crystallisation; heat to 50°C-60°C until the material becomes a clear, transparent liquid. This heating process does not affect performance.

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After using the hardener, blanket the container with nitrogen or dry air and close the lid tightly to prevent moisture-induced discoloration

and use any remaining material as soon as possible.

Safety precautions :

Work in a well-ventilated area. Avoid skin contact and wear protective clothing, a mask

and protective gloves as necessary. Do not eat, drink or smoke during handling. After handling, wash hands and skin thoroughly with plenty of water and soap.

Refer to the material safety data sheet for further information.

Notes :

All data above were measured under specified conditions. In view of the effects of actual processing methods and other factors,

customers should conduct the necessary performance 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
25 °C	77 °F
118 g	0.2601 lb
25 °C	77 °F
100 g	0.2205 lb
2.5-3.5 GPa	362.6 to 507.6 ksi
120-135 MPa	17405 to 19580 psi
70-85 MPa	10153 to 12328 psi
>80 MPa	>11603 psi
121 °C	249.8 °F
105 °C	221 °F
60 °C	140 °F
20 °C	68 °F
50 °C	122 °F
80 °C	176 °F
1,000 kg	2205 lb
200 kg	440.9 lb
220 kg	485 lb
20 kg	44.1 lb
15 °C	59 °F
-25 °C	-13 °F
-60 °C	-76 °F