

Tooling Materials

EPMOLD 155

Epoxy Laminating Resin by Infusion

APPLICATIONS

EPMOLD 155 is a tooling resin designed for infusion laminating process, which is made up of special epoxy resin and hardener. It cures at room temperature, and can reach high heat resistance level after proper post-cure process. It is developed for the making of large size of molds like wind blade mold, etc.

FEATURES

- Low exothermic during curing
- Low viscosity of the mixed resin, faster infusion process, easy to use
- High temperature resistance, suitable for water heating and electrical heating mold system
- Long pot life, suitable for large mold making and applications at high temperature

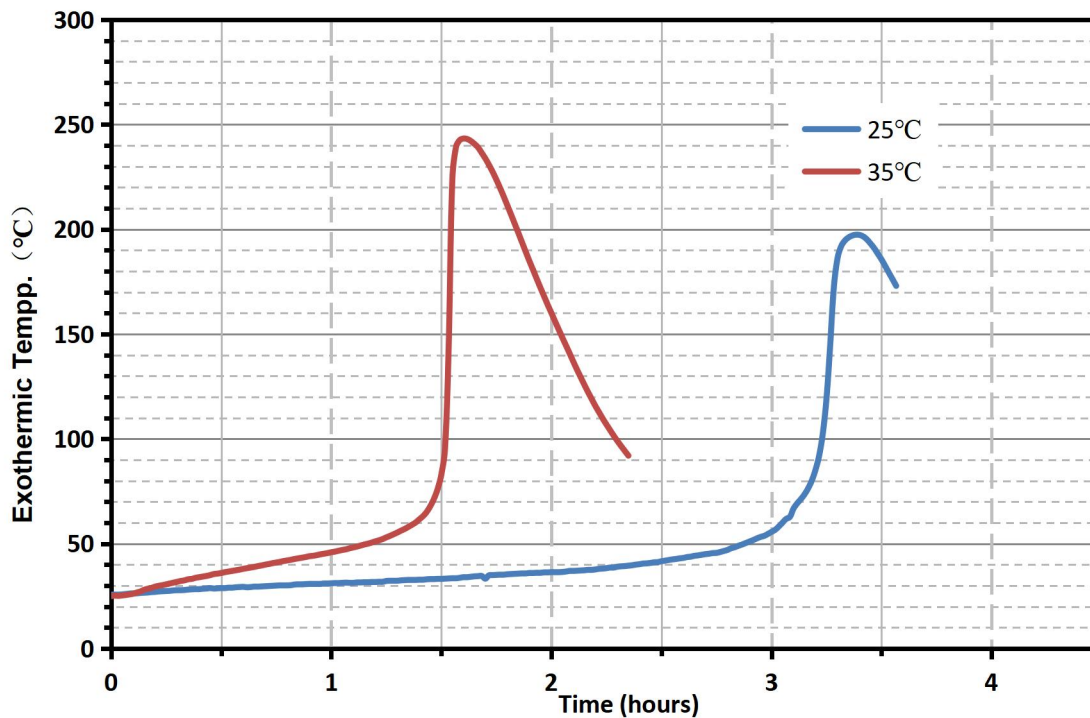
PHYSICAL PROPERTIES

Test Item	Test method	EPMOLD 155 Resin	EPMOLD 155 Hardener
Mixing ratio by weight		100	20
Aspect	visual	liquid	liquid
Color	visual	light yellow	Blue
viscosity at 25°C (mPa.s)	ISO 2555:2018	1,200-1,500	5-30
Mixed viscosity at 25°C (mPa.s)	ISO 2555:2018	260-320	
Density before mixing at 25°C (g/cm ³)	ISO 1675:1985	1.12-1.20	0.90-0.95
Density after curing at 25°C (g/cm ³)	ISO 2781:1996	1.17	
Gel time (500g) at 25°C (min)	Gel Timer	100-150	
Peak temperature(Ambient temp 25°C test) (mixing 100g in 200ml in paper cup at 25°C)	Thermoelectric Thermometer	200°C	
Time to reach peak temperature (mixing 100g in 200ml paper cup at 25°C)	Thermoelectric Thermometer	205 min	

Mixing Viscosity

EPMOLD 155 Exothermic Temp. VS Curing Time

Mixing 100g in 200ml paper cup at 25/35°C



	25°C	35°C
Time to reach peak Temp.	205 min	100 min
Max. exothermic Temp.	200°C	243°C

MECHANICAL PROPERTIES

Property	Test method	EPMOLD 155
Shore Hardness	ISO 868:2003	87 D
Flexural modulus	ISO 178:2001	2.5-3.5 GPa
Flexural strength	ISO 178:2001	120-135 MPa
Tensile modulus	ISO 527:1993	2.5-3.5 GPa
Tensile strength	ISO 527:1993	75-85 MPa
Elongation at break	ISO 527:1993	4% approx..
Compression strength	ISO 604:2002	>110 MPa

Curing condition: values above are obtained on standard specimens : 60°C/4h + 80°C/4h + 120°C/16h.

Glass transition temperature

Tg (100°C/24h post curing)	ISO 11357 :2002(DSC)	133°C
Tg (120°C/24h post curing)	ISO 11357 :2002(DSC)	149°C
Tg (130°C/16h post curing)	ISO 11357 :2002(DSC)	155°C
Tg (150°C/24h post curing)	ISO 11357 :2002(DSC)	161°C

PROCESSING

Resin and hardener are weighed at given mixing ratio, and then mixed homogeneously before use. To avoid slow infusion and poor penetration to the glass fiber because of increased viscosity, it is recommended to consume the mixed material within 2/3 of the pot life. Pot life varies based on different material quantity and ambient temperature.

Demolding could be carried out after curing at room temperature for 8 hours and then followed by heating at 40°C for 12 hours.

To avoid any risk of distortion or tooling shrinkage, and to improve the high temperature resistance, a precise curing cycle is to be observed. A conformer is recommended for complex shapes.

The following thermal treatment can be carried out: 6 hours at 60°C, 9 hours at 90°C, 9 hours at 120°C and 12 hours at 130°C, and observe an increase and a decrease in temperature of maximum 20°C per hour between stages.

PACKAGING

EPMOLD 155 RESIN	EPMOLD 155 HARDENER
1000 kg	900 kg
220 kg	180 kg
20 kg	3.5 kg

USABLE LIFE AND STORAGE

while stored in dry place and in original unopened containers at temperature between 15°C and 25°C, the shelf life of resin is 48 months and the shelf life of hardener is 24 months. Exposure to low temperature for longer time might cause crystallization. In case crystallization occurs, heat it up to 50-60°C until it becomes to transparent liquid. Heating the product will not have any defective effect on the property of the product.

Any open can must be tightly closed under dry air or nitrogen blanket. The remaining product should be used up as soon as possible.

HANDLING PRECAUTIONS

Avoid contact with skin while in application, wear mask, gloves and protection close when necessary; used in well ventilated area.

For further information, please consult product safety data sheet.

WARRANTY INFORMATION-PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective and fully satisfactory for the intended end use.