EPMOLD 145
Epoxy Tooling Resin

APPLICATIONS

EPMOLD 145 is a tooling resin designed for infusion laminating process, which is made up of special epoxy resin and hardener. It cures at low 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

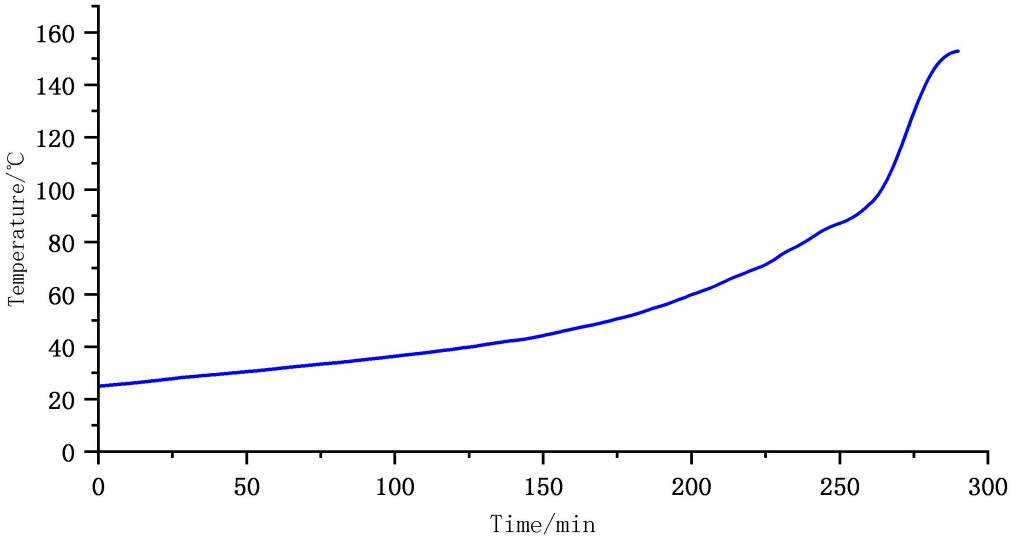
- Low exothermic during curing
- Low shrinkage, low distortion of the mold
- Low viscosity of the mixed resin, faster infusion process, easy to use
- High temperature resistance, suitable for water heating and electrical heating mold system
- Long pot life, suitable for large mold making and applications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

PHYSICAL PROPERTIES

Item	Test Method	EPMOLD 145 Resin	EPMOLD 145 Hardener
Mixing ratio by weight		100	26
Aspect	Visual	Liquid	Liquid
Color	Visual	Light yellow	Colorless to light yellow
Viscosity at 25℃ (mPa.s)	ISO 2555:2018	Approx. 600	Approx. 25
Mixed viscosity at 25℃ (mPa.s)	ISO 2555:2018	Approx.320	
Density before mixing at 25℃ (g/cm^3)	ISO 1675 : 1985	Approx. 1.19	Approx. 0.95
Density after curing at 25℃ (g/cm^3)	ISO 1183 :2019	Approx. 1.16	
Pot Life（500g）at 25℃	Thermoelectric Thermometer	Approx. 195min	
Peak exothermic temperature (500g mixture, 25℃)	Thermoelectric Thermometer	Approx. 154℃	
Time to reach peak exotherm (500g mixture, 25℃)	Thermoelectric Thermometer	Approx. 297min	

Heat release curve

EPMOLD 145 mixed 500g, heat release curve at room temperature 25℃



MECHANICAL PROPERTIES

Property	Test method	EPMOLD 145
Shore Hardness	ISO 868:2003	≥ 80D
Flexural modulus	ISO 178:2001	≥ 2.0 GPa
Flexural strength	ISO 178:2001	≥ 95 MPa
Tensile modulus	ISO 527:1993	≥ 2.3 GPa
Tensile strength	ISO 527:1993	≥ 65 MPa
Elongation at break	ISO 527:1993	≥ 3.5%
Compression strength	ISO 604 :2002	≥ 90 MPa
Tg	ISO 11357:2002 (DSC)	≥ 140 ℃

Curing condition: values above are obtained on standard specimens: 60℃ 4h+80℃ 3h+100℃ 2h+145℃ 12h.

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 25℃*6h+40℃*6h+60℃*12h.

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:4 hours at 80℃*6h+ 100℃*4h + 120℃*4h +145℃*24h, and observe an increase and a decrease in temperature of maximum 20°C per hour between stages.

PACKAGING

EPMOLD 145 RESIN	EPMOLD 145 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 of resin is 24 months and the shelf life of hardener is 12 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 PRECAUSIONS

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.