

Tooling Materials

EPMOLD 170LV

High Thermal Resistance Tooling Resin

Introduction

EPMOLD 170LV is an epoxy tooling resin designed for infusion process of glass or carbon parts. EPMOLD 170LV is an ambient cured and then capable for demoulding after mid-cure at elevated temperature (60°C for 12 hours recommended). It behaves good thermal resistance after post cure. EPMOLD 170LV is a long pot life system that suitable for large size or complex part making.

Features

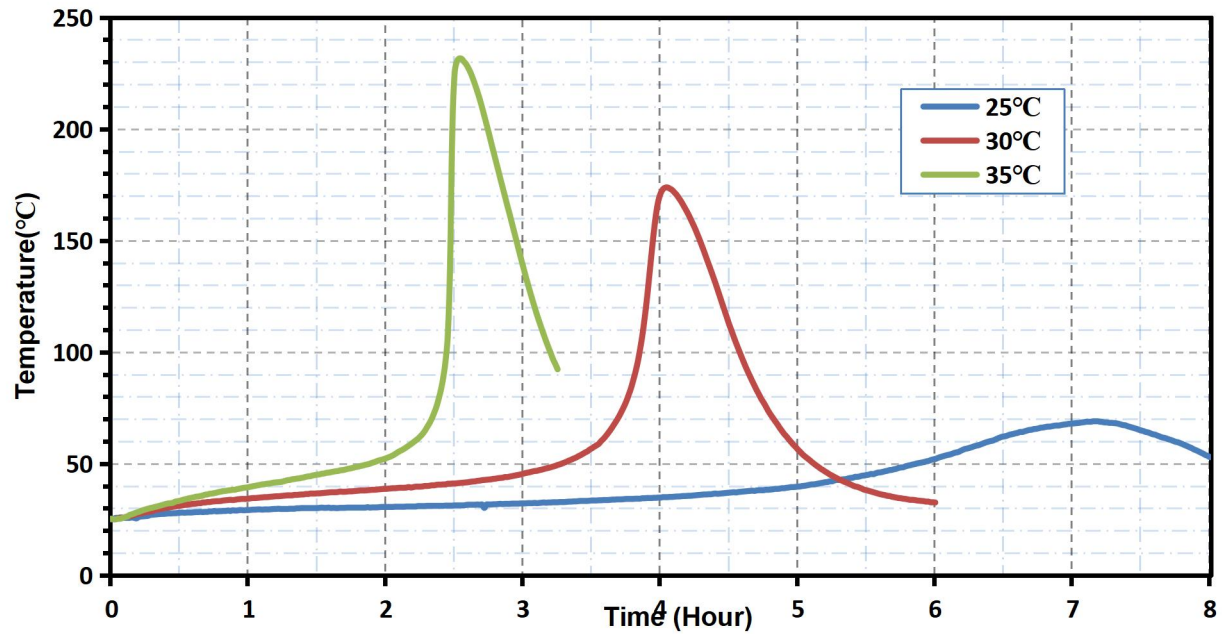
- Low initial mixed viscosity for easier infusion
- Ambient curing
- Low shrinkage for accurate part manufacture
- High thermal resistance
- Long pot-life and gel time, capable of infusing large or complex parts

System information

Component Properties		
	EPMOLD 170LV Resin	EPMOLD 170LV Hardener
Aspect	Liquid	Liquid
Colour	Light yellow	Clear
Density at 25°C	1.15 ~ 1.25 g/cm ³	0.92 ~ 0.98 g/cm ³
Viscosity at 25°C	1,200 ~ 1,600 mPa.s	10 ~ 30 mPa.s
Mix ratio by weight	100	26
Initial mixed viscosity at 25°C	250 ~ 300 mPa.s	
Cured density at 25°C	1.12 ~ 1.20 g/cm ³	
Gel time (500g in air at 25°C)	200 ~ 250 min	

Working properties

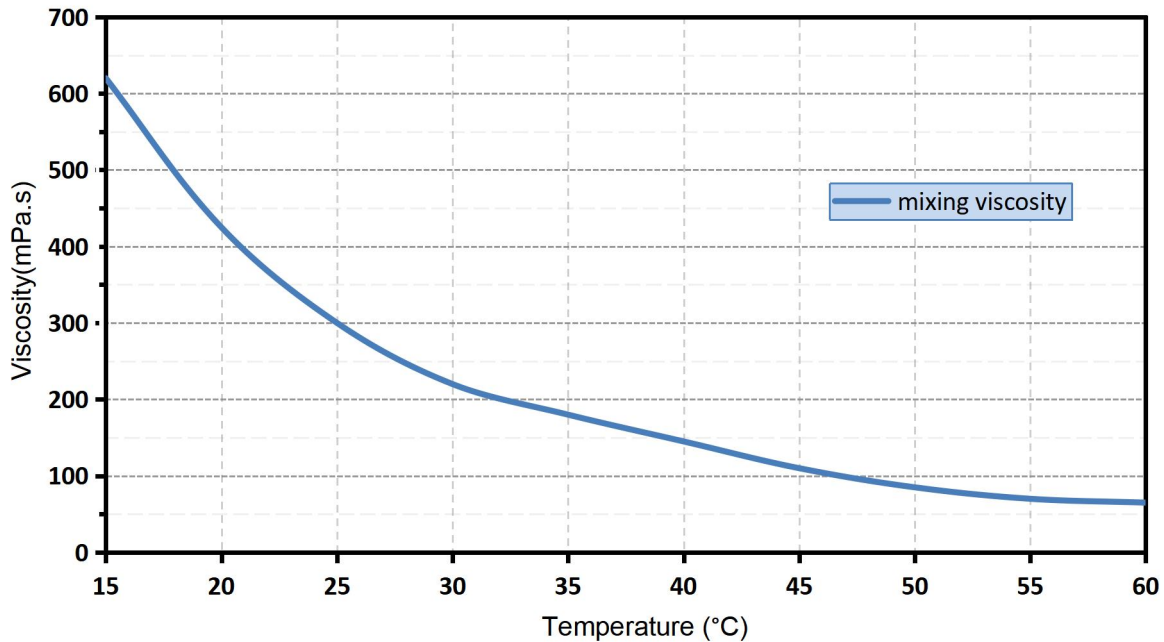
Temperature vs Time at Centre of 100g/200ml Pot Life Test



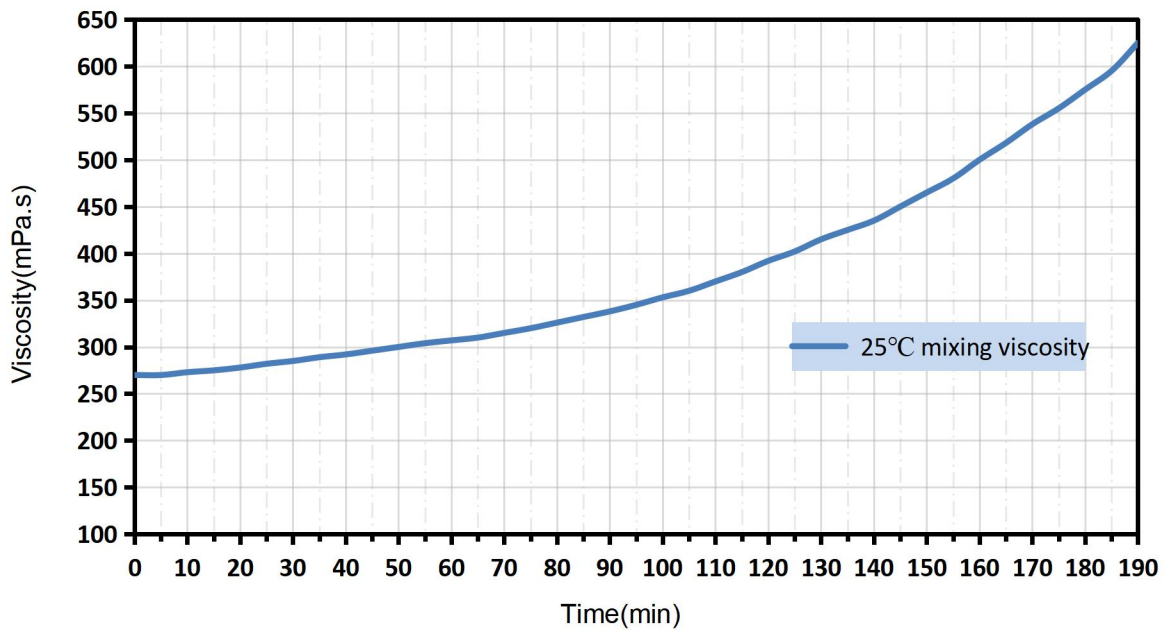
Exotherm profiles			
Temperature	25°C	30°C	35°C
Time to Peak Exotherm	430 minutes	243 minutes	153 minutes
Peak Exotherm	69°C	174°C	232°C

Mixing Viscosity

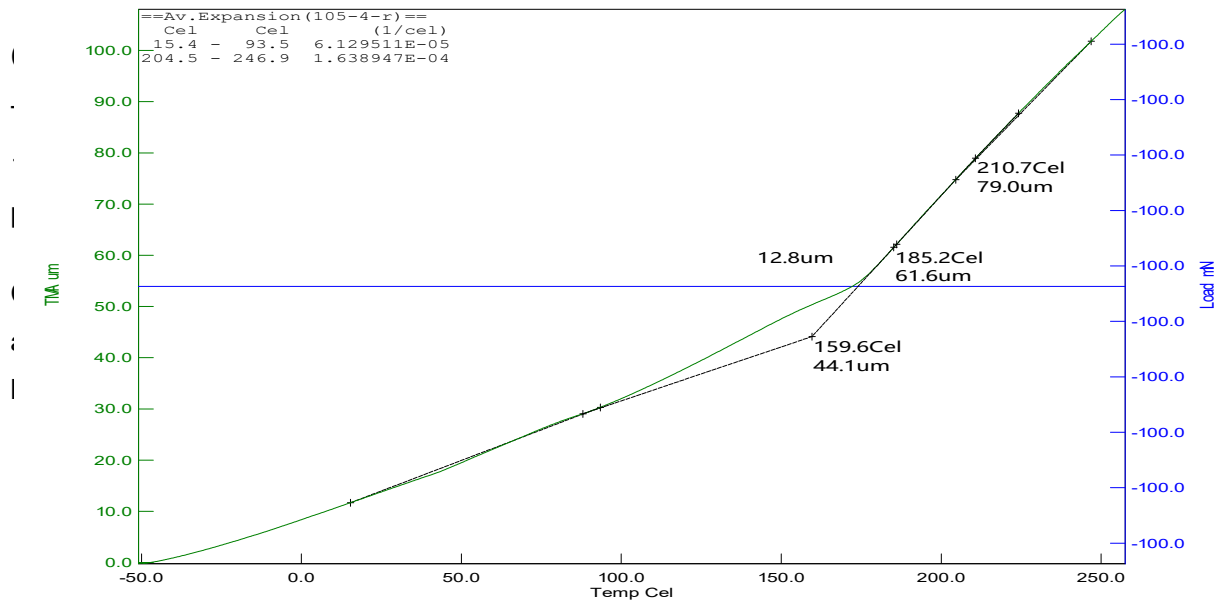
Mixing viscosity VS Temperature (Mixing quantity: 500g)



Mixing viscosity VS Time at 25°C (Bathing temperature: 25°C, Mixing quantity: 500g)



Mixing viscosity VS Time at 25°C	
Initial viscosity at 25°C	270 mPa.s
Time to 600 mPa.s	185 min



Mechanical properties

Prooerties	Test method	Typical value
Flexural modulus	ASTM D-790	2.5~3.5 Gpa
Flexural strength	ASTM D-790	120~135 MPa
Tensile strength	ASTM D-638	70~80 MPa
Compression strength	ASTM D-695	100~120 Mpa
Linear shrinkage	ASTM D-2566	0.4-0.6%
CTE (30°C to 120°C)	ASTM E831	$6.12 \times 10^{-5} \text{K}^{-1}$
Glass transition temperature (Ultimate)	ASTM D-3418 (DSC)	175°C

* Typical properties, not to be construed as specifications.

CTE Test result

Module: TMA Data Name: EPMOLD 170LV
Measurement Date: 2018/1/4 Sample Name: EPMOLD 170LV
Sample Length: 3.891 mm Sample Cross-section Area: 0.000 mm²

Processing

Resin and hardener are weighed at given mixing ratio, and then mixed thoroughly before use. To void slow infusion and poor impregnation to the glass fiber because of increased viscosity, recommended to consume the mixed material within 2/3 of the pot life.

Demolding could be carried out after heating at 60°C for 12 hours.

In order to avoid any risks 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.

Packaging

EPMOLD 170LV Resin	EPMOLD 170LV Hardener
1,000 kg	900 kg
220 kg	180 kg

Shelf 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 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 60-80°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

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.