

WP-R5600W3K

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Standard Prepreg Epoxy Resin System



Wells Advanced Materials (Shanghai) Co., Ltd.

Creating Partners.

Introduction

WP-R5600W3K produced by WAM is a cured epoxy resin at 125°C, which is used in manufacturing automobile exterior parts and other similar manufacturing fields with high requirements for appearance and performance. WP-R5600W3K's stickiness and viscosity are very suitable for prepreg processing. There is few difference in properties (viscosity and flexibility) along with temperature changes. Its storage period is 4 weeks under room temperature and 1 year under -18°C.

Features and Advantages

- Excellent transparency, no white spots in the product.
- Nice fluidity of the resin.
- Hot-melt resin/solvent-free: excellent working environment; products with minimize porosity and high quality.
- The best operability of prepreg processing: good viscosity, stickiness and flexibility.
- Long storage life: Store for 4 weeks under 25°C and the humidity is not higher than 65%.

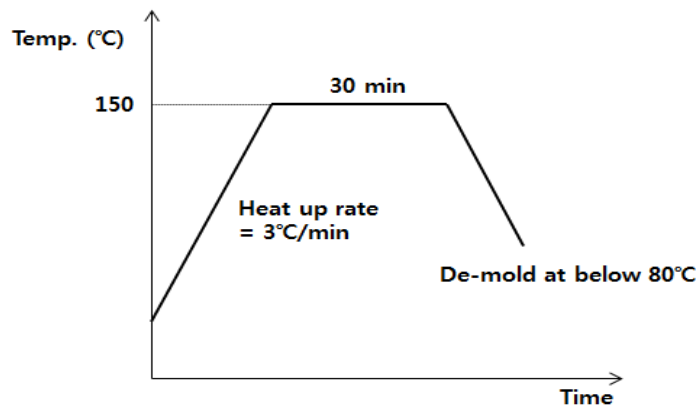
Recommended processing and applications

- Molding process (inflation autoclave, autoclave, hot press plate): automobile exterior parts, etc.

Recommended Curing Condition

- Curing conditions of molding process: 90 mins~30 mins (120~150°C)

* Curing condition: required mending according to product size, transfusion, and molding method.



Example of curing condition for molding process

Storage

The resin system should be stored in cool and dry place or cold storage. After taking out the resin from cold storage, place the resin to room temperature, and then open the PE sealing bag to prevent condensation.

Storage period	Temperature (°C)	Humidity (%)	Storage Period
	25	≤65	4 Weeks
	0	≤65	3 Months
	-18	-	1 Year

Prepreg Processing

1. Melting Condition

- Oven temperature: 70°C-80°C ×30-80 mins.
- Required time varies with different temperature and amount of melting.

2. Coating Condition

- Temperature between 73°C-80°C.
- Increase the temperature properly if the coating quantity is low to get better surface.

3. Impregnation Condition

- Temperature between 80-110°C. Increase the temperature properly if the impregnation is NOT sufficient. The temperature varies with different production speed and product thickness.
- Note that the resin is easy to cure above 100°C
- Adjust the tension, gap, pressure and other conditions according to the fiber and weight per unit area.

Resin Properties

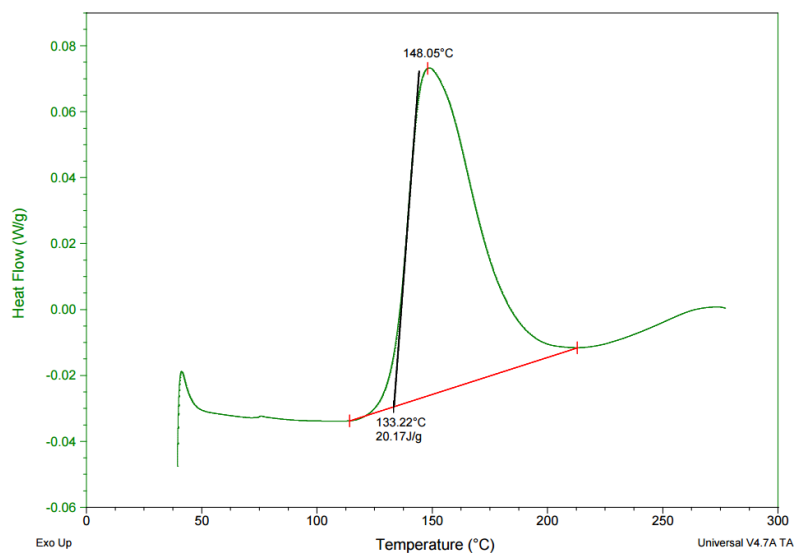
– Viscosity			
	Viscosity (mPa.s, @70°C)	Viscosity (mPa.s, @80°C)	Fluidity
WP-R5600W3K	15,000-19,000	6,500-8,500	Low
– Gel Time			
	Gel Time (s, @120°C)		
WP-R5600W3K	760-960		

— Isothermal DSC Gel Time

Temperature	Gel time (min)
100℃	35
110℃	20
120℃	14
130℃	10
140℃	9
150℃	8

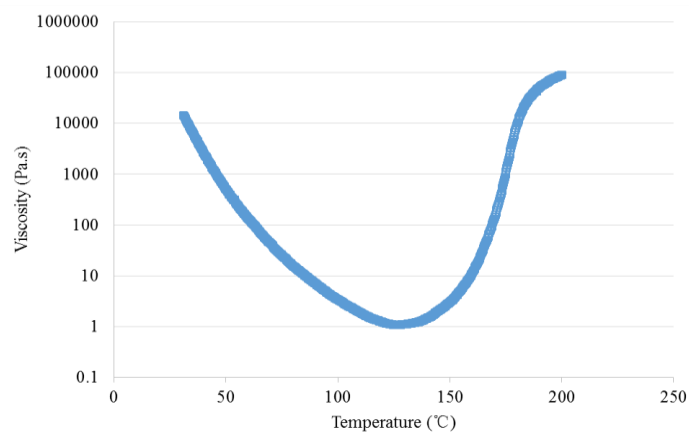
DSC Curve (Curing)

— Heating Rate (10℃/min)



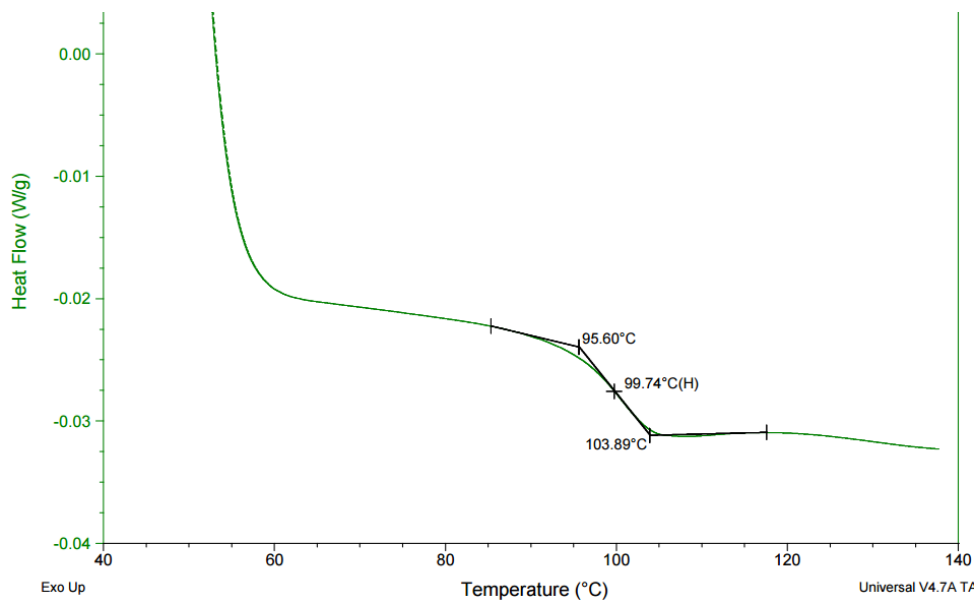
Viscosity & Temperature Curve

— Heating Rate (3℃/min)



Glass Transition Temperature (T_g)

– By DSC (GB/T 19466.2-2004):100℃



Mechanical Properties

Test	Method	Unit	WP-R5600W3K
Tensile Strength	GB/T 2567	MPa (psi)	70 (1.0 x 10 ⁴)
Tensile Modulus	GB/T 2567	MPa (psi)	3100 (4.5x 10 ⁵)
Elongation at Break	GB/T 2567	%	2.9
Flexural Strength	GB/T 2567	MPa (psi)	139 (2.0x 10 ⁴)
Flexural Modulus	GB/T 2567	MPa (psi)	3254 (4.7 x 10 ⁵)
Impact Strength	GB/T 2567 Unnotched Charpy	KJ/m ²	32

Package

Resin

Carton box

25kg/box

Handling Precautions

- | | | |
|---|----|---|
| Personal Protection Equipment... | 1. | Wear protection gloves to avoid direct contact with skin. |
| Respiratory Protection..... | 2. | No special protection. |
| Eyes Protection..... | 3. | Chemical anti-spattering goggles and face guard are recommended. |
| Body Protection..... | 4. | Use a protection coat which can be resisted, protection shoes, gloves, coat and emergency shower equipment according to situations. |

First aid

- | | | |
|------------------------|----|--|
| Skin..... | | Wash with warm soap water for at least 5 minutes or the contaminant removed. |
| Eyes..... | 1. | Contamination of the eyes by resin, hardener or mix should be treated immediately by flushing with clean, running water or physiologic saline for 20 minutes or the contaminant removed. |
| | 2. | A doctor should then be consulted. |
| Inhalation..... | 1. | Anyone taken ill after inhaling vapors should be moved outdoors immediately. |
| | 2. | In all cases of doubt, call for medical assistance. |

Important notice:

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