

# AMICURE<sup>®</sup> UR7/10

## Cure Accelerator

### DESCRIPTION

Amicure UR7/10 cure accelerator, a finely ground version of Amicure UR accelerator; is a substituted urea-based accelerator (1 Phenyl 3,3 dimethyl urea) for dicyandiamide-cured epoxy resins. It combines excellent latency at ambient temperature with rapid cure in systems heated above its activation temperature.

Amicure UR7/10 is supplied as a micropulverized crystalline solid which is easily dispersed into liquid epoxy resin.

### TYPICAL PROPERTIES

Property	Value	Unit	
Appearance	White Powder		
Melting Point	130-133	°C	
Assay	97	%	
Solubility in Water	< 0.5	%	
Recommended Use Level (phr, EEW=190)	0.5-3.0 parts with 4.0-8.0 parts dicyandiamide		
Particle size	90% <10	µm	
	50% <7	µm	

### BENEFITS

- Rapid cure and property development
- High glass transition temperature
- Good one-component shelf stability
- Good flow properties

### APPLICATIONS

- One-pack paste and film adhesives
- Heat-cure composites
- Prepreg composites

### STORAGE AND HANDLING

Refer to the Safety Data Sheet for Amicure UR7/10 cure accelerator.

## SHELF LIFE

At least 36 months from the date of manufacture in the original sealed container at ambient temperature. Store away from excessive heat and humidity in tightly closed containers.

## TYPICAL CURE SCHEDULE

45-60 minutes at 265°F (130°C).

## TYPICAL PERFORMANCE

### Formulation

Bis-A liquid resin	100.0	(EEW=190)
Amicure CG-1200	6.0	
Amicure UR7/10	2.0	

### Lap Shear Strength (psi)\*

Cure Temp.	Cure Time (min)					
	5	10	15	20	30	40
275°F (135°C)	—	—	2,900	—	3,000	3,200
300°F (150°C)	—	3,100	—	3,200	3,400	—
320°F (177°C)	3,200	3,700	—	4,500	—	—

\* Lap points were prepared using chromic acid solution etched 2024-T3 1"x4" aluminum coupons with ½" overlap and 10 mils bond line thickness.

## SUPPLEMENTARY DATA

TABLE 3: REACTIVITY PROFILE

Formulation	1	2	3
Bis-A liquid resin (EEW=190)	100.0	100.0	100.0
Amicure CG-1200	6.0	6.0	6.0
Amicure UR7/10	2.0	3.0	4.0
<b>Stroke Gel Time (min)</b>			
@ 266°F (130°C)	12.0	10.5	9.5
@ 285°F (140°C)	7.3	5.3	5.3
@ 300°F (150°C)	4.3	3.5	3.5
@ 320°F (160°C)	3.2	2.3	2.3
@ 338°F (170°C)	2.0	1.5	1.6
@ 355°F (180°C)	1.6	1.3	1.2
<b>DSC Reactivity Profile*</b>			
Beginning of Exotherm (°C)	131	129	130
Onset (°C)	145	145	144
Peak Exotherm (°C)	155	154	152
Heat of Reaction, J/g	191	240	217
Glass Transition Temperature (°C)	117	120	117
<b>Isothermal Reaction at 265°F (130°C)</b>			
Time to reach peak exotherm (min)	7.2	6.7	6.2

\* Scan rate = 50°F (10°C)/min

FIGURE 1 :  
GEL TIME VS. PHR OF AMICURE UR7/10

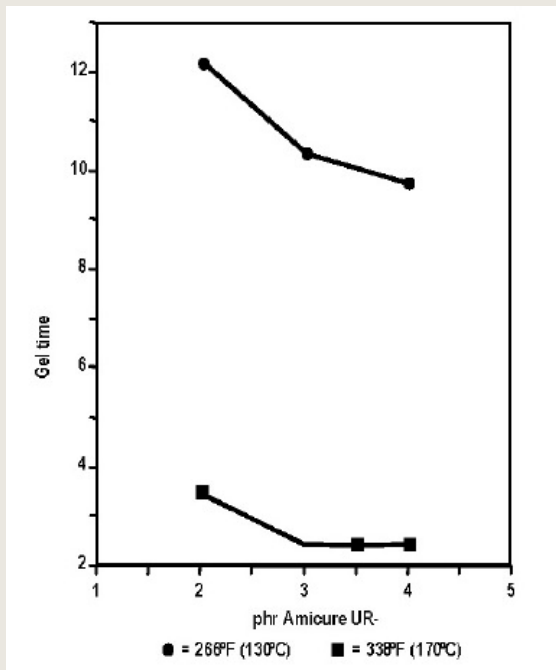
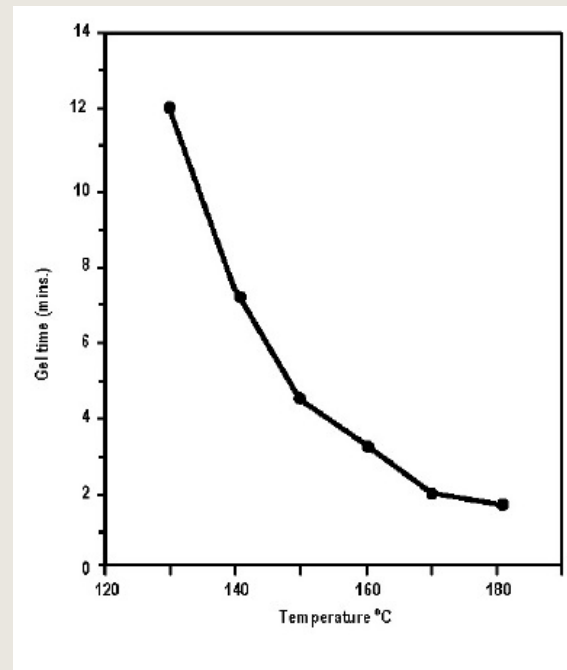


FIGURE 2:  
GEL TIME VS. TEMPERATURE,  
FORMULATION 1



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