Product information

AMICURE® 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 50% <7	µm 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.

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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
Stroke Gel Time (min)			
@ 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
DSC Reactivity Profile*			
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
Isothermal Reaction at 265°F (130°C)			
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

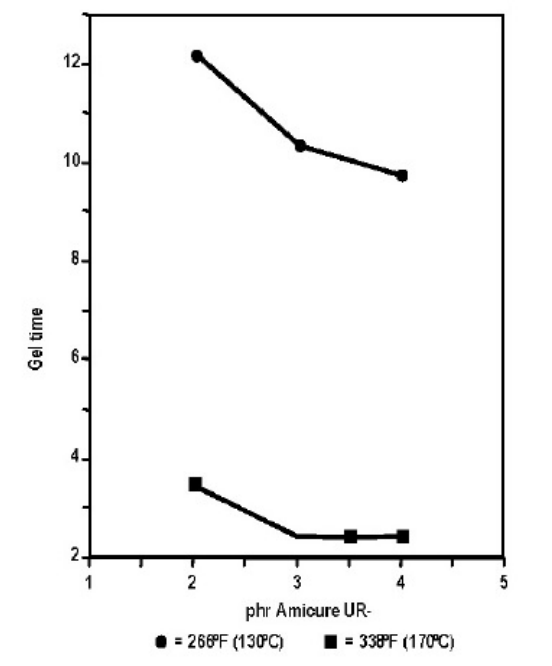
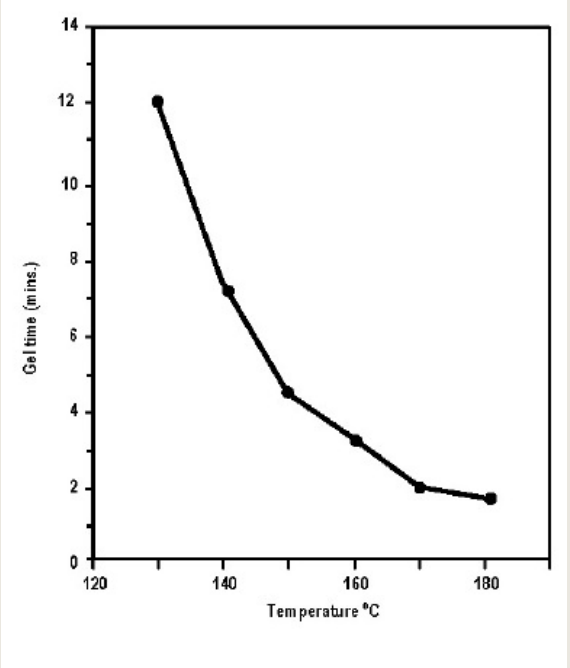


FIGURE 2:
GEL TIME VS. TEMPERATURE, FORMULATION 1



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