

AMICURE® UR Curing Agent**DESCRIPTION**

Amicure UR cure 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 UR cure accelerator is supplied as a micropulverized crystalline solid which is easily dispersed into liquid epoxy resin. It is also available on a custom basis in different mean particle sizes with or without the addition of fumed silica as a free flow agent.

ADVANTAGES

- Rapid cure and property development
- High glass transition temperature
- Good one-pack 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 UR curing agent.

SHELF LIFE

At least 24 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).

TABLE 1: TYPICAL PROPERTIES

Appearance	White Powder
Melting Point (°C)	130-133
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

TABLE 2: TYPICAL PERFORMANCE

Formulation						
Bis-A liquid resin (EEW=190)	100.0					
Amicure CG-1200	6.0					
Amicure UR	2.0					
Lap Shear Strength (psi)*						
Cure Temp.	Cure Time (min)					
	5	10	15	20	30	40
275°F (135°C)	—	—	2,892	—	3,053	3,164
300°F (150°C)	—	3,090	—	3,156	3,360	—
320°F (177°C)	3,177	3,685	—	4,495	—	—

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

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 UR	2.0	3.0	4.0
Stroke Gel Time (min)			
@ 265°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
@ 340°F (170°C)	2.0	1.5	1.6
@ 355°F (180°C)	1.6	1.3	1.2
HYBRIDUR® 570 Dispersion			
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 UR

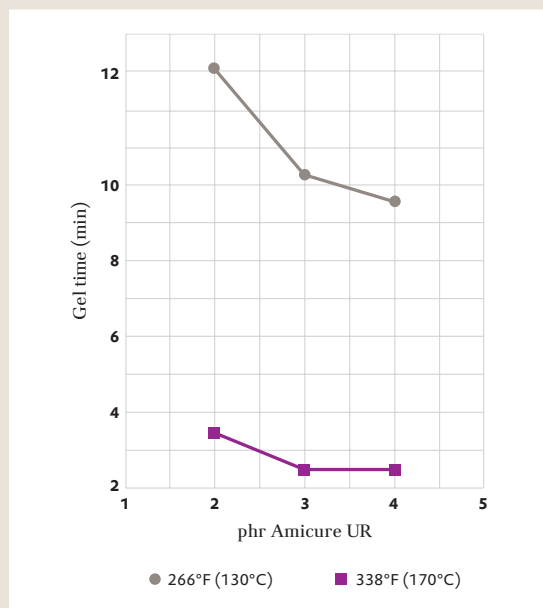
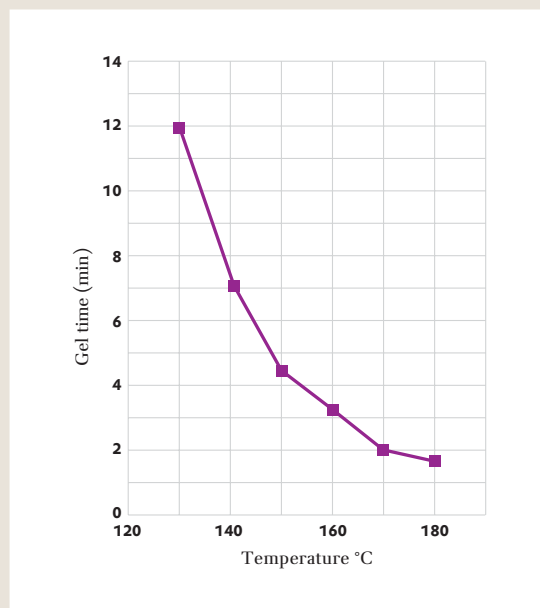


FIGURE 2: Gel Time vs. Temperature, Formulation 1



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