

## Advanced Materials

# Accelerator DT 310

Catalyst for Benzoxazines

### Key Properties

- Allows curing at lower temperatures
- Effective for homopolymerization or benzoxazine formulations
- Will catalyze epoxy/benzoxazine formulations
- Can be used to lower the temperature of cure

### Description

Accelerator DT 310 is a catalyst for benzoxazines thermoset resin homopolymerization reaction or benzoxazine formulations.

### Processing

Pultrusion, Resin Transfer Molding (RTM), Vacuum assisted RTM (VARTM), Film infusion, Pre-preg, etc

### Applications

Advanced composites, Structural adhesives, Laminates for printed wiring boards, Encapsulates, High performance coatings, Molding compounds.

### Product Data

	Accelerator DT 310
Visual appearance	White crystal
Melting point, °C (°F)	127 - 134 (261 - 273)

\* Product data are based on Huntsman testing methods, copies are available upon request

## Formulations

The amount of catalyst used in any formulation will depend on benzoxazine and other components of the formulation and the activity required. In general, when Accelerator DT 310 is used as a catalyst for homopolymerization, 2 to 10 phr will suffice.

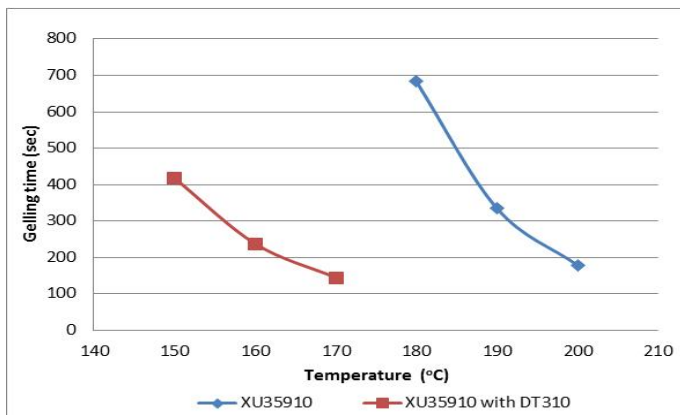
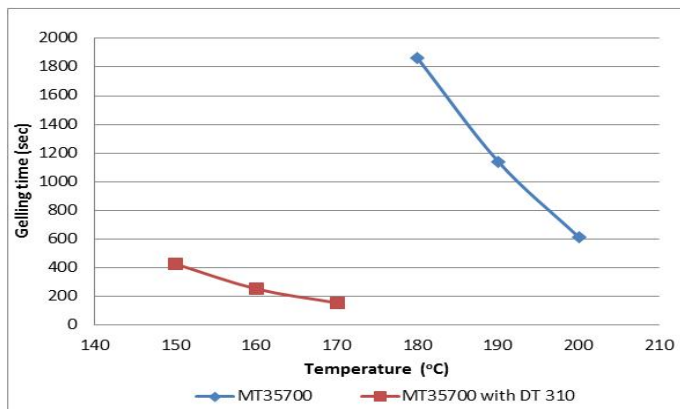
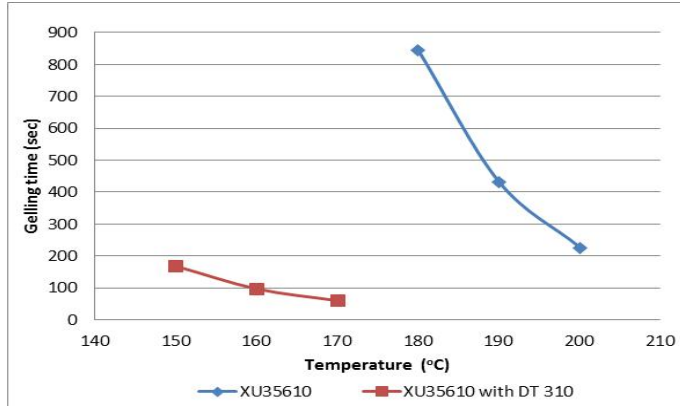
### Performance with addition of 5 phr of Accelerator DT 310

Formulation	XU 35610 <sup>1</sup>	MT 35700 <sup>2</sup>	XU 35910 <sup>3</sup>	
<b>DSC uncured<sup>4</sup> (without catalyst)</b>				
Onset Temperature, °C	199	223	201	
Peak Temperature, °C	220	238	219	
ΔH, J/g	323	305	421	
<b>DSC uncured<sup>4</sup> (with catalyst)</b>				
Onset Temperature, °C	136	158	157	
Peak Temperature, °C	183	185	186	
ΔH, J/g	382	396	436	
<b>Thermal Properties</b>				
<b>Cure schedule: 1h/140 °C +2h/160 °C+2h@180 °C</b>				
Tg DSC, °C <sup>4</sup>	156	163	182	
Tg DMA, °C <sup>5</sup>	E'	160	157	181
	E''	172	171	194
	Tan Delta	187	188	209

1. Bisphenol A based benzoxazine
2. Bisphenol F based benzoxazine
3. Thiodiphenol based benzoxazine
4. DSC: TA Q2000 / ramp @ 10°C per minute / 30°C- 300°C / nitrogen
5. DMA: TA Q800 / ramp @ 5°C per minute / 30°C - 300°C / nitrogen

## Gel time versus Temperature

The graph below shows how reactivity is affected by the addition of 10 phr of catalyst to XU 35610, MT 35700, and XU35910. However catalyst loading level in a formula depend on factors such as cure time/temperature, epoxy content and other additives being incorporated.



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**Storage**

Accelerator DT 310 may be stored for up to 1 year from date of manufacture at temperature around 77 °F provided the product is stored in sealed container.

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**Handling  
Precautions****Caution**

Do not use this product until the MSDSs have been read and understood. To protect against any potential health risks presented by our products, the use of proper personal protective equipment (PPE) is recommended. Eye and skin protection is normally advised. Respiratory protection may be needed if mechanical ventilation is not available or is insufficient to remove vapors. For detailed PPE recommendations and exposure control options consult the product MSDS or a Huntsman EHS representative.

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