

## Advanced Materials

# Accelerator DT 300

Catalyst for Benzoxazines

### Key Properties

- Effective for homo-polymerization of benzoxazines
- Will catalyze epoxy/benzoxazine formulations
- Can be used to lower the temperature of cure
- Allows for shorter cure time

### Description

Accelerator DT 300 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 300
Visual appearance	White crystal
Melting point, °C (°F)	154 - 156 (309 - 313)

\* 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 300 is used as a catalyst for homopolymerization, 5 to 15 phr will suffice.

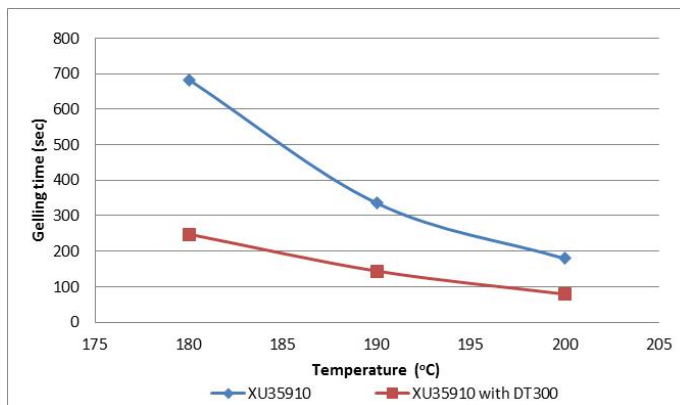
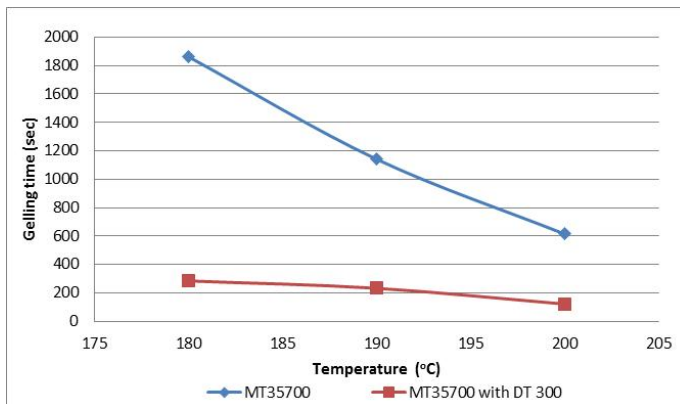
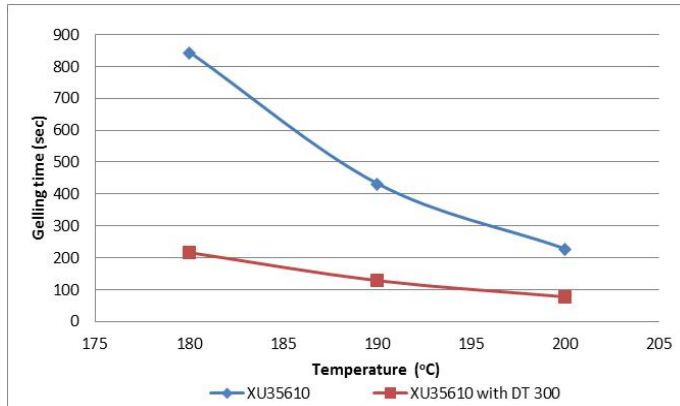
### Performance with addition of 10 phr of Accelerator DT 300

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	200	
Peak Temperature, °C	220	238	219	
ΔH, J/g	323	305	421	
<b>DSC uncured<sup>4</sup> (with catalyst)</b>				
Onset Temperature, °C	160	185	175	
Peak Temperature, °C	204	209	202	
ΔH, J/g	367	382	420	
Gelling time at 200C, sec	77	121	79	
<b>Thermal Properties</b>				
<b>Cure schedule 1h/150 °C +2h/180 °C+2h@200 °C</b>				
Tg DSC, °C <sup>4</sup>	158	159	202	
Tg DMA, °C <sup>5</sup>	E'	144	155	190
	E''	159	166	206
	Tan Delta	175	184	221

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 300 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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