

## Technicure® DCMU

CAS# 330-54-1

### Description:

Technicure® DCMU, (3-(3,4-dichlorophenyl)-1,1-dimethylurea), is a substituted urea. It is used as a dicyandiamide (DICY) accelerator in one-component epoxy resin based formulations. Typically the product is used with epoxy resin and dicyandiamide between 1-3 phr. The loading level of an accelerator will provide balance of low temperature reactivity and formulation shelf stability.

### Advantages:

- Good formulation shelf stability
- Moderate glass transition temperature
- Excellent adhesion to a variety of substrates

### Typical Applications:

- One-component paste and film adhesives for automotive and aerospace applications
- Composites such as pre-pregs
- Powder coatings

### Handling Precautions:

Refer to the product Safety Data Sheet

### Typical Properties:

Appearance:	Off White powder
Particle size:	>80% less than 44 micron
Melting point:	155°- 160°C
Assay:	98% minimum
Moisture content:	<0.7 %

Recommended use level with

Epoxy resin (EEW=190): 1-3 PHR with 3-8 PHR of DICY

### Typical Formulations (by wt.):

Liquid epoxy resin (EEW=190)	100	100
Technicure® D-10 <sup>1</sup>	8	8
Technicure® DCMU	1	3
Fumed silica (H 200U) <sup>2</sup>	1	1

### Reactivity by DSC<sup>3</sup>

Onset Temp., °C	144	138
Peak Temp., °C	154	146
Heat of Reaction, J/gm	259	273

### Glass Transition Temperature, °C

	125 <sup>4</sup>	135 <sup>4</sup>
	138 <sup>5</sup>	147 <sup>5</sup>

1. Dicy – Product of ACCI Specialty Materials
2. Fumed silica – Product of OCI Company Ltd.
3. 10°C/min. scan rate
4. By DMA, after 30 minutes cure at 140°C
5. By DMA, after 60 minutes cure at 140°C

### **A&C Catalysts, Inc.**

1600 W. Blancke St. Linden, NJ 07036 Tel: (908) 474-9393 Fax: (908) 474-9388 [www.ac-catalysts.com](http://www.ac-catalysts.com)

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## Supplemental Technical Information:

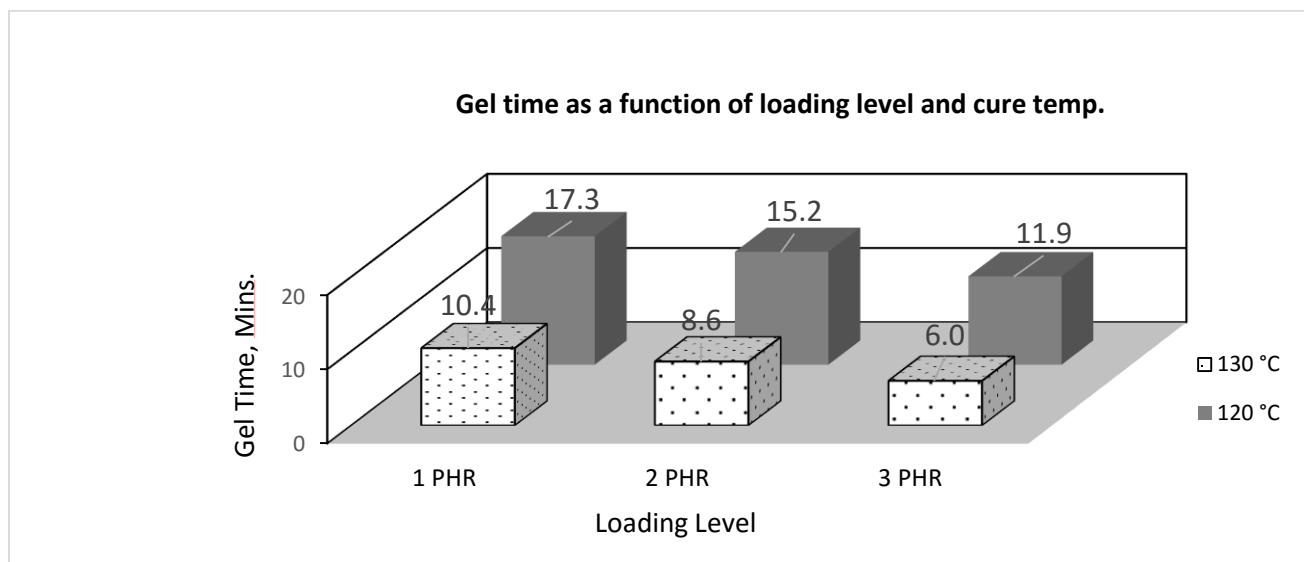
Three one-part formulations (Table 1) containing Technicure® DCMU were prepared to evaluate the effect of increasing level of the product on gel time at different temperatures.

Data in Table 1 shows that as the loading level of Technicure® DCMU increases the gel time decreases. The effect of loading level is more pronounced at higher temperature.

**Table 1. Formulations (by wt.) and gel time**

Liquid Epoxy resin (EEW=190)	100	100	100
Technicure® D-10	8	8	8
Technicure® DCMU	1	2	3
Fumed silica (H 200U)	1	1	1
Gel time <sup>1</sup> , minutes			
@ 120°C	17.3	15.2	11.9
@130°C	10.4	8.6	6.0

1. Sunshine gel timer



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