



Technicure® PDU-250M

CAS # 101-42-8

Description:

Technicure® PDU-250M, N,N-dimethyl-N-phenyl urea, 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:	129- -134 °C
Assay:	99% minimum
Moisture content:	<0.2%

Recommended use level with

Epoxy resin (EEW=190):	1-3 PHR with 3-8 PHR of DICY
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Typical Formulations (by wt.):

Liquid epoxy resin (EEW=190)	100	100
Technicure® D-10 ¹	8	8
Technicure® PDU-250M	1	3
Fumed silica (H 200U) ²	1	1

Reactivity by DSC³

Onset Temp., °C	144	143
Peak Temp., °C	154	151
Heat of Reaction, J/gm	276	256

Glass Transition Temperature, °C

	143 ⁴	135 ⁴
	153 ⁵	152 ⁵

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.

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Supplemental Technical Information:

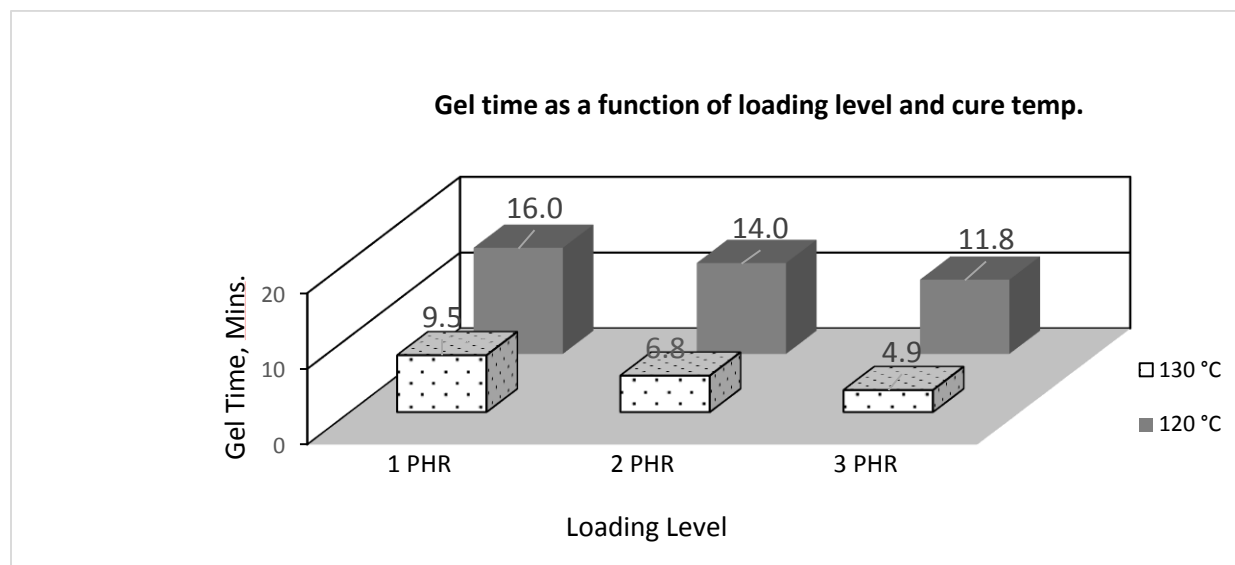
Three one-part formulations (Table 1) containing Technicure® PDU-250M as a dicy accelerator were prepared to evaluate the effect of increasing level of the product on gel time at different temperatures.

Data in Table 1 shows that as the loading level of Technicure® PDU-250M 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® PDU-250M	1	2	3
Fumed silica (H 200U)	1	1	1
Gel time ¹ ,minutes			
@120°C	16.0	14.0	11.8
@130°C	9.5	6.8	4.9

1. Sunshine gel timer



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