Technical Data

Technicure® IPDU-8

Description:

Technicure® IPDU-8, N-3-(dimethylamino) carbonylaminomethyl-3,5,5-trimethylcyclohexyl-N,N-dimethyl-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.

Among all substituted ureas as DICY cure accelerators, IPDU-8 offers the most latency.

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
Average Particle Size:	>80% less than 44 micron
Melting point:	190 - 210°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[1]	8	8
Technicure® IPDU-8	1	3
Fumed silica (H 200U)[2]	1	1
Reactivity by DSC[3]		
Onset Temp., °C	151	144
Peak Temp., °C	162	155
Heat of Reaction, J/gm	298	266
Glass Transition Temperature[4], °C		
	151	151

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 60 minutes cure at 140°C

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Supplemental Technical Information:

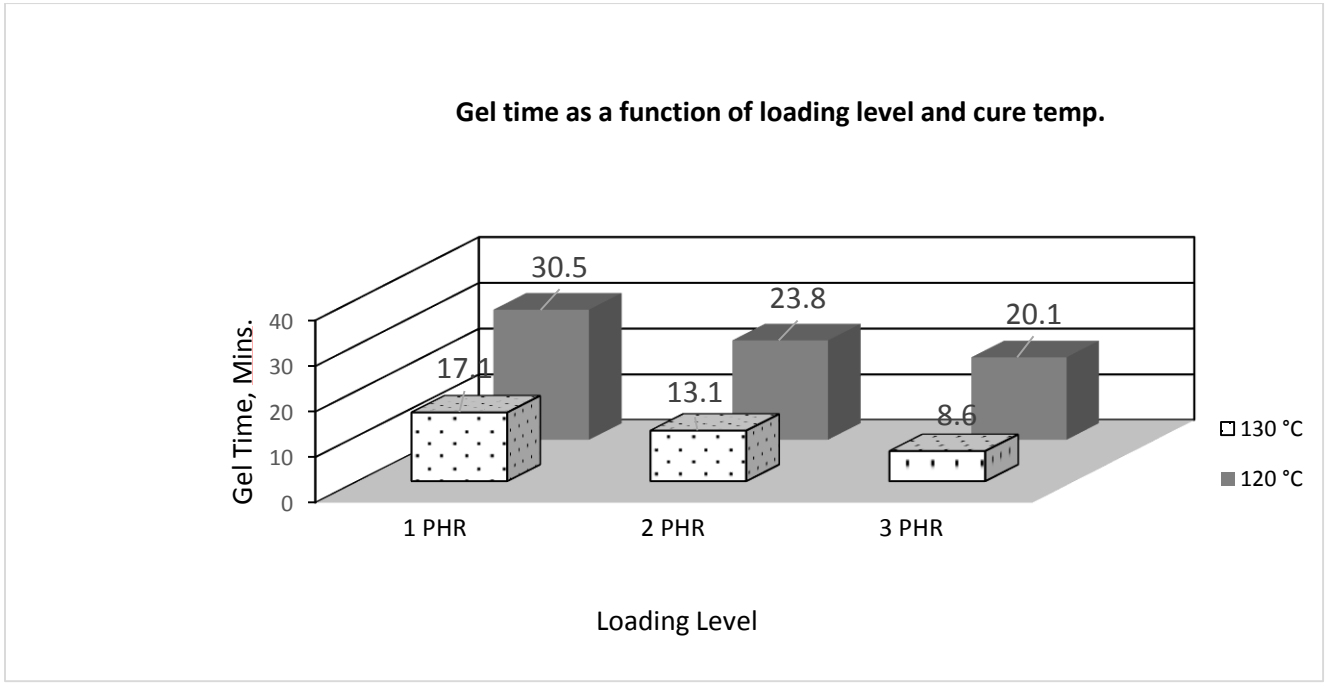
Three one-part formulations (Table 1) containing Technicure® IPDU-8 were prepared to evaluate the effect of increasing level of the product on gel time at different temperatures**.**

Data in Table 1 shows that as the loading level of Technicure® IPDU-8 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® IPDU-8	1	2	3
Fumed silica (H 200U)	1	1	1
Gel time[1], minutes			
@ 120°C	30.5	23.8	20.1
@130°C	17.1	13.1	8.6

1. Sunshine gel timer



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