CVC Thermoset Specialties

An Emerald Performance Materials Company

TECHNICAL BULLETIN

OMICURE™ U-35 and OMICURE™ U-35M
Proprietary Aliphatic Bis Urea

DESCRIPTION

OMICURE U-35, a cycloaliphatic substituted urea, is intended for use as a latent accelerator for the dicyandiamide cure of epoxy resins. The addition of OMICURE U-35 to epoxy/dicy formulations produces shelf stable one part products which cure in shorter times and/or at lower temperatures. Of the CVC substituted ureas, OMICURE U-35 will impart the longest room temperature shelf life to epoxy/dicy formulations. OMICURE U-35M represents the micronized grade of OMICURE U-35.

On an equal weight basis, OMICURE U-35 is less efficient than aromatic ureas for accelerating the epoxy/dicy cure. Cures can be obtained at 115°C in approximately one hour and in less than seven minutes at temperature of $\geq$ 150°C. Suggested use levels of OMICURE U-35 are $\leq$ 5 phr. Cure times are dependent on the composition of the formulated product and your particular end application.

Room temperature shelf lives (time to double viscosity) in excess of six months are easily obtained. Some of the factors which can effect shelf life are formulation ingredients and compounding parameters. Ingredients in which OMICURE U-35 is insoluble at processing and storage temperatures further enhance storage stability of formulated systems. OMICURE U-35 can be incorporated into your formulation concurrent with the dicy addition.

APPLICATIONS

As a latent accelerator in the dicyandiamide cure of epoxy resins used in:

- ❑ Adhesives
- ❑ Powder Coatings
- ❑ Prepregs
- ❑ Encapsulation
- ❑ Reinforcements

TYPICAL PROPERTIES

Appearance	Clean powder
Color	Off white
Odor	Ammoniacal
Melting Point, °C	190 - 210
Moisture Content, max %	0.7
Particle size, U-35 min. % through a 325 mesh screen	80
Particle size, U-35M (micronized) min. % through a 325 mesh screen	95

HEALTH & SAFETY PRECAUTIONS

OMICURE U-35 is a fine powder classified as a nuisance dust. It is not a primary skin or eye irritant but will cause respiratory irritation with prolonged dust inhalation.

The use of engineering controls to keep the material confined or convey dust away from the breathing zone is the preferred method of handling. Alternatively, an approved dust respirator and impervious clothing should be worn if the material becomes airborne.

Allowing the dust to settle on vegetation may cause harm and may prevent germination.

Refer to CVC Thermoset Specialties Material Safety Data Sheet on OMICURE U-35 for additional safety and health information. The MSDS is revised as new data becomes available.

PACKAGING & AVAILABILITY

OMICURE U-35 (unmicronized) and OMICURE U-35M (micronized) come in plastic lined corrugated cardboard boxes (net weight 40 lbs.) and plastic 5 gallon pails. Check with your sales representative for specific designations and particle size specifications.

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Shelf Life and Tg of Omicure U-35 Accelerated DGEBA/DICY

FORMULATION, pbw	A	B	C	D	E	F
DGEBA*	100	100	100	100	100	100
OMICURE DDA-10 (dicyandiamide)	8	8	8	8	8	8
Aerosil R-972 fumed silica	3	3	3	3	3	3
Omicure U-35	0	1	3	5	-	-
Monuron	-	-	-	-	5	-
Diuron	-	-	-	-	-	5
Room Temperature Shelf Life						
Time to double viscosity, weeks	>70	>70	>70	>70	16	24
Tg**, °C	140	129	124	120	115	115

*EEW:182-192, 25°C Viscosity: 11,000-14,000 cps

**Determined on DSC second scan, first scan to 275°C, 20°C per minute

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