

# OMICURE® U-410M

Micronized urea accelerator blend

80% 2,4 Diaminotoluene

20% 2,6 Diaminotoluene

## DESCRIPTION

OMICURE® U-410M, an aromatic substituted urea, is intended for use as a latent accelerator for the dicyandiamide cure of epoxy resins. The addition of OMICURE U-410M to epoxy/dicy formulations reduces the time and/or temperature required to cure these shelf-stable one-part products.

Compared to the other CVC Thermoset Specialties substituted ureas, toluene bis dimethyl urea provides the greatest degree of acceleration to epoxy/dicy formulations. However, some sacrifice in room temperature shelf life may occur. At concentrations required to provide an equal degree of acceleration, versus other CVC substituted ureas toluene bis dimethyl urea, produces the least effect on Tg.

OMICURE U-410M is a mixed isomer grade of OMICURE U-24 and is somewhat less expensive. DGEBA/dicy formulations accelerated with equal amounts of either of these products will have similar room temperature shelf lives. However, those containing U-410M will cure faster, with possibly a slight decrease in Tg. Suggested use levels of OMICURE U-410M are  $\leq 5$  phr. Curing can be accomplished in about 30 minutes at 100 °C and in about 3 minutes at temperatures  $\geq 150$  °C. Cure times are dependent on the composition of the formulated product and the particular end applications. Room temperature shelf lives (time to double viscosity) of  $> 3$  months can be obtained when  $\leq 1$  phr OMICURE U-410M is used with DGEBA/dicy. Some of the factors that can effect shelf life are formulation ingredients and compounding parameters. Ingredients in which OMICURE U-410M is insoluble at processing and storage temperatures will enhance overall storage stability. OMICURE U-410M 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	Off-white to white powder
Color	Off-white
Melting Point, °C	180 – 195
Moisture Content, max %	1.0
Particle size, min % through a 325 mesh screen	95

### PERFORMANCE DATA

Shelf Life and Tg of OMICURE U-410M and OMICURE U-24M Accelerated DGEBA/Dicy

Fomulation, pbw	A	B	C	D	E	F	G	H	I
DGEBA*	100	—————>							
OMICURE DDA-10 (dicyandiamide)	8	—————>							
Hydrophobic fumed silica	3	—————>							
OMICURE U-24M	0	1	3	5	-	-	-	-	-
OMICURE U-410M	-	-	-	-	1	3	5	-	-
Monuron	-	-	-	-	-	-	-	5	-
Diuron	-	-	-	-	-	-	-	-	5

Room Temperature Shelf Life	A	B	C	D	E	F	G	H	I
Time to double viscosity, weeks	> 70	13	10	9	13	10	8	16	24
Tg, °C**	140	134	127	117	132	123	116	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

### PACKAGING & AVAILABILITY

OMICURE U-410M comes in plastic-lined corrugated cardboard boxes (net weight 40 lb). Check with your sales representative for specific designations and particle size specifications.



### HEALTH & SAFETY PRECAUTIONS

OMICURE U-410M 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.

Refer to CVC Thermoset Specialties Safety Data Sheet on OMICURE U-410M for additional safety and health information. The MSDS is revised as new data becomes available.

### DISCLAIMER

The information contained herein is believed to be reliable, but no representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications or the results to be obtained there from. The information is based on laboratory work with small-scale equipment and does not necessarily indicate end product performance. Because of the variations in methods, conditions, and equipment used commercially in processing these materials, no warranties or guarantees are made as to the suitability of the products for the applications disclosed. Full-scale testing and end product performance are the responsibility of the user. CVC Thermoset Specialties shall not be liable for and the customer assumes all risk and liability of any use or handling of any material beyond CVC's direct control. THE SELLER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Nothing contained herein is to be considered permission, recommendation, nor as an inducement to practice any patented invention without permission of the patent owner. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES.

CVC Thermoset Specialties  
844 North Lenola Road / Moorestown, NJ 08057  
Phone: 856-533-3000 / Fax: 856-533-3003 / [www.cvcthermoset.com](http://www.cvcthermoset.com)



An Emerald Performance Materials® Company