



**Electronic
Materials
Incorporated**

"An ISO 9001 registered company"

**Technical Data Sheet
OPTOCAST 3410VM**

**U.V and/or Visible light and/or Heat Curable
One Component Epoxy**

Revision Date: 12/2004

OPTOCAST 3410VM is an ultra violet or visible light and/or heat curable epoxy suitable for opto-electronic assembly. It cures rapidly when exposed to U.V. or visible light in the 320-550nm range to a tough resistant material with excellent adhesion. It is highly purified, with a maximum ionic content of 10 P.P.M. total Na + K⁺, Cl⁻. Featuring ULTRA low shrinkage upon cure, OPTOCAST 3410VM is ideal for fixturing and aligning optical devices, while its extremely low coefficient of thermal expansion give it excellent thermal cycle performance.

Properties Uncured

Color	Amber/Brown
Viscosity Brookfield RVT Cps.	100,000
Filler type	Silica
Filler %	80
Shelf Life (when stored at 0°C or less)	6 months
Density	1.85

Properties Cured

Color	Amber/Brown
C.T.E.-ppm/°C	∞ 1- 14
Tg- °C	>150
Linear shrinkage %	0.25
Flexural strength psi	9,000
Tensile strength psi	18,000
Thermal conductivity W/mK	0.70
Hardness D.	92 minimum
Ionics ppm total Na ⁺ ,Cl ⁻ ,K ⁺ .	10 maximum
Vol. Resistivity ohms•cm	10 ¹⁵
Dielectric St. Volts/mil 1/8"	450

Use and Handling

- No measuring or mixing. OPTOCAST 3410VM is a single component system.
- Remove from freezer and allow to come to room temperature (20-30 mins).
- Working life at room temperature is approximately Three Days.
- Expose to U.V. light of wavelength range 325 - 550nm. Exposure time is a function of the light intensity, amount (mass) of epoxy and the type of substrate. See TSR #16 for more detailed cure information.
- Post cure @ 110-130°C for 10 to 30 minutes.

Cure shrinkage can be controlled by the end user. The actual chemical cure shrinkage of OPTOCAST 3410VM is much less than 0.3%. However, by applying too much energy (U.V. and/or thermal) initially, the cure reaction can proceed very rapidly, generating a very high cure exotherm. This rapidly raises the temperature of the epoxy - particularly in the thickest (dome) area of the glob, causing local thermal expansion, then rapid gelation- before the thinner (outer) sections have started to gel. When cooled back to ambient temperature, this results in a stress force in the direction of lifting or curling the perimeter of the glob. Don't be time greedy, patience will result in superior adhesion.

While the working life is 3 days, OPTOCAST 3410VM contains a high level of Silica and at room temperature Silica tends to settle, causing separation from the epoxy polymers. The user must assure themselves that any settling that might occur, does not cause inconsistent results.

Assume the material is stored – the refrigerator over night.