

**HYSOL GR15F-MOD2D**

Oct 11, 2017

PRODUCT DESCRIPTION**GR15F-MOD2D** provides the following characteristics:

Technology	Epoxy
Appearance	Black
Cure	Heat Cure
Product Benefits	High Tg Low moisture absorption Low viscosity Low stress Good moldability Good adhesion Excellent thermal cycle performance
Filler Type	Silica
Filler Weight, %	83
Typical Package	High power devices
Application	

GR15F-MOD2D is a technologically advanced green epoxy molding compound designed for high power devices especially for high temperature application with low moisture absorption requirements. It delivers outstanding performance and ease of use. It meets UL 94 V-0 flammability at 1/8 inch thickness.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Property	Method & Units	Typical Value
Gel time	@175°C,S	26
Spiral flow	@175°C, inch/cm	42/107
Viscosity	@175°C,PaS	10
Specific gravity	g/cm ³	1.93
Shelf life	@-18°C, days	183

TYPICAL PROCESS DATA

Handling	Typical Value
Preheat Temperature, °C	80 to100
Molding Temperature, °C	175 to 200
Transfer Pressure, Kg/cm ²	40 to 100
Transfer Time, seconds	6 to 18
Curing Time,3 mm section: @ 175°C, seconds	90 to 120
Post Mold Cure @ 175 to 190 °C, hours	6-12

GR15F-MOD2D has been formulated to provide the best possible moldability and as wide a molding latitude as possible. Although molding and curing conditions will vary from situation to situation, recommended starting ranges are shown above.

TYPICAL PROPERTIES OF CURED MATERIAL

All measurements taken at **175°C** unless otherwise noted. All physical, electrical and analytical measurements taken on specimens cured for 2 minutes @ 175°C with post cure of 12 hours @190 °C, unless otherwise specified.

Physical Properties

Property, Test methods	Description, units	Typical Value
Coefficient of Linear Thermal Expansion , TMA	Below Tg, ppm/°C Above Tg, ppm/°C	12 40
Glass Transition Temperature, TMA	°C	230
Storage Modulus, DMA	@RT, MPa @175 °C, MPa @260 °C, MPa	20560 15500 2690
Flexural Strength	@ 25°C, MPa	120
Flexural Modulus	@ 25°C,MPa	15100
Adhesion, Tab pull	Cu, PMC /MSL3 Ag, MC /MSL3 Ni, PMC /MSL3	355/365 420/345 190/170
Moisture Absorption %	PCT 24hrs	0.35%
Extractable Ionic Content, 20hrs	Cl ⁻ ,ppm Na ⁺ , ppm Br ⁻ ,ppm	4.1 5.0 0
Electronic Conductivity	µs/cm	3.2
Volume Resistance, 500volt	× 10 ¹⁶ Ω.cm	3.3
Thermal Conductivity	W/m.k	0.8

GENERAL INFORMATION

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Powder Storage - Powder or preforms should be stored at -18°C or below, in closed containers. After removal from cold storage, the material **MUST** be allowed to come to room temperature, in the sealed container, to avoid moisture contamination. The suggested waiting time for a standard 22 Kg pail is 24 hours.

Material removed from containers may be contaminated during use. Do not return product to the original container. Hysol Huawei Electronics Ltd. cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service



Representative.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$

$\text{kV/mm} \times 25.4 = \text{V/mil}$

$\text{mm} / 25.4 = \text{inches}$

$\text{N} \times 0.225 = \text{lb}$

$\text{N/mm} \times 5.71 = \text{lb/in}$

$\text{N/mm}^2 \times 145 = \text{psi}$

$\text{MPa} \times 145 = \text{psi}$

$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$

$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$

$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$

$\text{mPa}\cdot\text{s} = \text{cP}$

NOTE

This product is a developmental product. It is not now, and may not be in the future, commercially available. The properties of the uncured material and the physical properties of the cured material have been established as a point of reference only. The information provided in this Lab Data Sheet (LDS) including the recommendations for use and application of the product are based on our best knowledge and experience of the product as at the date of this LDS. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide.

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