



PRODUCT DESCRIPTION

HYSOL GR 510 is a Green, semiconductor grade mold compound providing the following product characteristics:

Technology	Epoxy
Cure	Heat
Appearance	Black
Filler Type	Silica
Filler Weight, %	88
Application	Mold Compound
	QFP
Product Benefits	<ul style="list-style-type: none"> • Green product • Low stress • High adhesion • Low moisture absorption
Flammability Rating	UL 94 V0 @ 1/8 inch thickness

HYSOL GR 510 is a green epoxy-based molding compound offers much improved JEDEC performance as well as moldability property.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Spiral Flow, @ 175°C, inches	44
Gel Time @ 175°C, seconds	36
Shelf Life @ 5°C, days	183
Specific Gravity, g/cm ³	1.99

TYPICAL PROCESS DATA

Handling

Preheat Temperature, conventional mold, °C	70 to 90
	170 to 190
Molding Temperature, °C	190
Transfer Pressure, Kg/cm ²	40 to 85
Transfer Time @ 175°C, seconds	5 to 15
Hot Hardness, Shore D @ 175 °C, after 90 seconds	81
Post Mold Cure @ 175 °C, hours	4 to 8

HYSOL GR 510 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.

Please contact Hysol Technical Service for alternative process parameters if needed.

TYPICAL PROPERTIES OF CURED MATERIAL

All measurements are taken at 25°C, unless otherwise noted.

All physical, electrical and analytical measurements are taken on specimens cured for 120 seconds @ 175°C with post cure of 6 hours @ 175°C, unless otherwise specified.

Physical Properties

Glass Transition Temperature, °C:	
(Tg) via TMA	113
Loss modulus peak @ DMA	111
Tan δ peak @ DMA	119
Coefficient of Thermal Expansion, TMA, ppm/°C:	
Below Tg	8
Above Tg	27
Flexural Modulus @ 25°C	N/mm ² 21,287
	(psi) (3,087,418)
Flexural Strength @ 25°C	N/mm ² 162
	(psi) (23,496)
DMA Modulus:	
@ 25 °C	N/mm ² 24,643
	(psi) (3,574,165)
@ 175 °C	N/mm ² 844
	(psi) (122,411)
@ 260 °C	N/mm ² 717
	(psi) (103,992)
Moisture Absorption, 24 hours PCT, %	0.21
Application Specific Properties	
Thermal Conductivity, W/(m-K)	0.88
pH of extract @ 100 °C, after 20 hours	4.1
Extractable Ionic Content @ 100 °C, after 20 hours extract, ppm:	
Chloride (Cl-)	5.9
Sodium (Na+)	3.5
Electrical Conductivity, μS/cm:	
After 20 hours extract @ 100 °C	20
Volume Resistivity @ 21 °C, 500 Volts, ohms-cm	30×10 ¹⁵
Dielectric Constant @ 1MHz	3.8

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 Hysol Huawei Electronics Co., Ltd. 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.

Mold Compound materials should be stored at 5°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 15 kg carton box is 24 hours.

Material removed from containers may be contaminated during use. Do not return product to the original container. Hysol Huawei Electronics Co., 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 Hysol Huawei Electronics Co., Ltd. Technical Service Center or Customer Service Representative.

Disclaimer

Note:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Hysol Huawei is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

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