Technical Data Sheet

HYSOL GR 50HT

2205270
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PRODUCT DESCRIPTION

HYSOL GR 50HT is a Halogen-Free ("Dark Green") transfer mold compound providing the following product characteristics:

Technology	Epoxy
Cure	Heat
Appearance	Black
Filler Type	Crystalline Silica
Filler Weight, %	83
Application	Mold Compound
Target Package(s)	TO-220F/3PF (Full Pack)
Product Benefits	• Halogen free • High thermal conductivity • High productivity • Void-free narrow gap filling down to 0.37 mm
Flammability Rating	UL 94 V0 @ ⅛ inch thickness

LOCTITE HYSOL GR 50HT is designed to improve thermal management in semiconductor devices. This material is formulated to have high thermal conductivity, which makes it applicable for devices requiring improved heat dissipation. It is specifically recommended for use in the assembly of fully molded (isolated) power transistors and rectifiers with high HTRB and reliability requirements.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Spiral Flow, @ 175°C, inches	18
Gel Time @ 175ºC, seconds	27
Shelf Life @ 5ºC , days	183

TYPICAL PROCESS DATA

Handling

Preheat Temperature, ºC	75 to 100
Molding Temperature, °C	180 to 185
Molding Pressure, Kg/cm²	30 to 70
Transfer Time, seconds	10 to 30
Curing Time, seconds	90 to 120
Hot Hardness, Shore D, after 120 seconds	78
Post Cure Time, hours	2 to 6

HYSOL GR 50HT 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 175ºC, unless otherwise noted.

All physical, electrical and analytical measurements are taken on specimens cured for 2 minutes @ 175°C with post cure of 6 hours @ 175°C, unless otherwise specified.

Physical Properties

Glass Transition Temperature (Tg), °C		170
Coefficient of Thermal Expansion , ppm/°C:		
Below Tg		20
Above Tg		55
Flexural Modulus @ 25 °C	N/mm²	15,125
	(psi)	(2,193,696)
Flexural Strength @ 25ºC	N/mm²	118
	(psi)	(17,114)
DMA Modulus:		
@ 25ºC	N/mm²	20,611
	(psi)	(2,989,373)
@ 175ºC	N/mm²	3,914
	(psi)	(567,677)
@ 260 °C	N/mm²	977
	(psi)	(141,701)
Moisture Absorption , PCT 24 hours, %		0.36
Specific Gravity, g/cm²		2.19

Application Specific Properties

Thermal Conductivity , W/(m-K)	2.0
Volume resistivity @ 21°C, 250 V, Ω-cm	7×10^{15}
Dielectric Constant @ 1 MHz	4.27
Dissipation Factor @ 1 MHz	4.8×10^{-3}

GENERAL INFORMATION

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

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

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 5ºC 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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