



# MG52F

July 2017

## PRODUCT DESCRIPTION

MG52F provides the following product characteristics:

<b>Technology</b>	Epoxy
<b>Appearance</b>	Black
<b>Cure</b>	Heat cure
<b>Product Benefits</b>	• High productivity
<b>Typical Package</b>	SOIC, PLCC, QFP, PDIP, Power
<b>Application</b>	discrete and High voltage devices
<b>Application</b>	Molding compound
<b>Flammability</b>	STP95A V-0

MG52F is designed for high volume encapsulation of surface mount devices. MG52F is applicable for devices having chip dimensions up to 400 mils square.

MG52F meets STP95A V-0 Flammability at 3mm thickness.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Gel Time @ 177 °C, seconds:

Conventional mold,	24
Automold,	18

Spiral Flow, @ 177°C, inches:

Conventional mold,	30
Automold,	28

Shelf Life:

@ 5°C, months	12
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## TYPICAL PROCESS DATA

### Handling

Preheat Temperature :

Conventional mold, °C	85 to 100
Automold, seconds	0 to 4

Molding Temperature, °C 170 to 190

Molding Pressure, psi 500 to 1,000

Transfer Time:

Conventional mold, seconds	15 to 25
Automold, seconds	5 to 10

Curing Time, 3 mm section:

Conventional mold:	
@ 170°C, seconds	70 to 100
@ 190°C, seconds	60 to 90

Automold:

@ 170°C, seconds	30 to 60
@ 190°C, seconds	20 to 45

Post Cure Time, hours:

@ 175°C	1 to 2
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MG52F 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 21 °C unless otherwise noted. All physical, electrical and analytical measurements taken on specimens cured for 2 minutes @ 177 °C with post cure of 2 hours at 177 °C, unless otherwise specified.

### Physical Properties:

Coefficient of Thermal Expansion, cm/°C :

Below Tg	14×10 <sup>-6</sup>
Above Tg	60×10 <sup>-6</sup>

Glass Transition Temperature, °C

155

Specific Gravity

1.84

Molded shrinkage, as molded, %

0.3

Flexural Strength psi:

@ 21 °C	22,000
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Flexural Modulus psi:

@ 21 °C	2.4×10 <sup>6</sup>
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Thermal Conductivity, CGS units

20×10<sup>-4</sup>

Moisture Absorption, 15 psi steam, %:

100 hours	0.57
1,000 hours	0.9

Water Extract Data, 1.5 hours water boil:

Conductivity, micro mhos	40
pH of extract	4.5

Extractable Ionic Content, ppm:

Chloride (Cl <sup>-</sup> )	2
Sodium (Na <sup>+</sup> )	2

### Electrical Properties:

Volume Resistivity, ohms-cm, 500 volts:

@ 21°C	100×10 <sup>15</sup>
@ 100°C	5×10 <sup>15</sup>
100 hours @ 15 psi	2×10 <sup>15</sup>
1,000 hours @ 15 psi	1×10 <sup>15</sup>

## 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.

**Powder Storage** - Powder or preforms 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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