HYSOL® ES1301™

April 2008

PRODUCT DESCRIPTION

HYSOL® ES1301™ provides the following product characteristics:

Technology	Epoxy
Appearance (Part A)	Black
Appearance (Part B)	Amber
Appearance (cured)	Black
Components	Two component - requires mixing
Mix Ratio, by volume - Part A: Part B	2 : 1
Mix Ratio, by weight - Part A: Part B	100 : 38
Cure	Heat cure
Application	Potting and Encapsulating

HYSOL® ES1301™ is a silica filled epoxy casting system recommended for coils, transformers, and general pupose casting.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties

Filler Content, %	50
Viscosity, Brookfield - RVF, 25 °C, cP:	
Spindle 5, speed 20 rpm	10,500
Density, @ 25 °C, g/cm³	1.6

Part B Properties

Filler Content, %	0
Viscosity, Brookfield - RVF, 25 °C, cP:	
Spindle 5, speed 20 rpm	750
Density, @ 25 °C, g/cm³	1.19

Mixed Properties

Viscosity, Brookfield - RVF, 25 °C, cP:	
Spindle 3, speed 20 rpm	1,600
Gel Time, 200gm mass @ 25 °C, hours	>8

TYPICAL CURING PERFORMANCE

Recommended Curing Conditions

4 hours @ 110 °C (Recommended cure)
2 hours @ 125 °C (Alternate cure)

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Glass Transition Temperature (Tg), °C	112
Coefficient of Linear Thermal Expansion, ppm/°C:	
Alpha 1, Above Tg @ 130 to 150 °C	169
Alpha 2, Below Tg @ 40 to 60 °C	67
Thermal Conductivity, W/mk	0.42
Density, , g/cm³	1.44
Linear Shrinkage, %	0.84
Shore Hardness , Durometer D	90 to 95
Tensile Strength, psi	6,953
Flexural Strength, psi	15,786
Tensile Elongation, %	1.0

Electrical Properties:

Dielectric Strength, 10 mils thickness, volts/mil	1,096
Breakdown voltage, (kV), @ 25 °C	21.8
Arc Resistance, seconds	139
Volume Resistivity, ohm/cm @ 25ºC	1.9×10^{16}
Surface Resistivity, ohms @ 25ºC	1.22×10^{16}
Volume Resistivity, ohm/cm @ 105ºC	1.42×10^{14}
Surface Resistivity, ohms @ 105ºC	1.98×10^{14}
Dielectric Constant / Dissipation Factor @ 25ºC:	
100 Hz	3.63 / 0.005
1 kHz	3.62 / 0.004
100 kHz	3.57 / 0.008
Dielectric Constant / Dissipation Factor @ 105ºC:	
100 Hz	4.5 / 0.068
1 kHz	4.18 / 0.039
100 kHz	3.9 / 0.016

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.

Note: Before using this product please purge approximately 30 ml. of material prior to application. Discard purged material in accordance with the Material Safety Data Sheet. A video instruction is available upon request.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.
Optimal Storage: 20 °C to 30 °C. Storage below 20 °C or greater than 30 °C can adversely affect product properties.
Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation 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

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Note

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