HYSOL® ES1002™

April 2008

PRODUCT DESCRIPTION

HYSOL® ES1002™ provides the following product characteristics:

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

HYSOL® ES1002™ is a two-component casting system with excellent handling properties. This low cost, flexible system is filled with a non-abrasive filler for machine metering/dispensing or regular hand mixer applications.

HYSOL® ES1002™ meets 94V-0 ration in 3.3mm cross section, file number E34947.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties

Density, @ 25 °C, g/cm³	1.57
Filler Content, %	50
Solids Content, %	100
Viscosity, Brookfield - RVF, cP:	
Spindle 6, speed 2 rpm	55,000
Spindle 6, speed 20 rpm	28,000

Part B Properties

Density, @ 25 °C, g/cm³	1.48
Filler Content, %	60
Solids Content, %	100
Viscosity, Brookfield - RVF, cP:	
Spindle 5, speed 20 rpm	6,300

Mixed Properties

Density, @ 25 °C, g/cm³	1.55
Peak Exotherm Temperature, °C:	
200 g mass	90
Pot Life @ 25 °C, minutes:	
200 g mass	60
Gel Time @ 25 °C, hours	5
Viscosity, Brookfield - RVF, cP:	
Spindle 4, speed 20 rpm	19,500

TYPICAL CURING PERFORMANCE

Recommended Curing Conditions

36 to 48 hours @ 25 °C (Recommended cure)
3 hours @ 60 °C (Alternate cure)

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Glass Transition Temperature, °C	50
Coefficient of Thermal Expansion, ppm/ºC:	
Pre Tg (Alpha 1)	66
Post Tg (Alpha 2)	150
Coefficient of Thermal Conductivity, W/(m·K)	0.644
Linear Shrinkage, %	0.1
Shore Hardness , Durometer D	88
24 Hour Water Moisture Absorption, %	0.32
Tensile Elongation, %	6.3
Tensile Strength, psi	2,670
Compressive Strength, psi	11,700
Flexural Strength, psi	4,975
Tear Strength, psi	240

Electrical Properties:

Dielectric Strength, 10 mils thickness, volts/mil	1,135
Volume Resistivity, ohm/cm @ 25ºC	6.38×10^{14}
Volume Resistivity, ohm/cm @ 105ºC	9.28×10^{10}
Surface Resistivity, ohms @ 25ºC	2.12×10^{15}
Surface Resistivity, ohms @ 105ºC	6.65×10^{15}
Dielectric Constant / Dissipation Factor @ 25ºC:	
100 Hz	4.7 / 0.04
1 kHz	4.6 / 0.03
10 kHz	4.4 / 0.02
100 kHz	4.2 / 0.02
Dielectric Constant / Dissipation Factor @ 105ºC:	
100 Hz	22.2 / 1.3
1 kHz	8.6 / 0.3
10 kHz	7.7 / 0.09
100 kHz	7.0 / 0.09

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

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