



HYSOL[®] ES0617[™]

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PRODUCT DESCRIPTION

HYSOL[®] ES0617[™] provides the following product characteristics:

Technology	Epoxy
Appearance (cured)	Black
Components	Two component - requires mixing
Mix Ratio, by volume - Part A: Part B	100 : 24
Mix Ratio, by weight - Part A: Part B	100 : 15
Cure	Heat cure
Application	Potting and Encapsulating

HYSOL[®] ES0617[™] is a filled system offering improved thermal conductivity and increased resistance to heat and thermal shock. This product is recommended for potting where high impact strength is required, and where rigid or flexible wire leads protrude directly from the encapsulation. This system eliminates microscopic cracking on flexing of leads. It adheres extremely well to lead materials, such as vinyl or neoprene.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties

Color	Black
Filler Content, %	48 to 52
Density, @ 25 °C, g/cm ³	1.5 to 1.65
Viscosity, Brookfield - RVF, 25 °C, mPa·s (cP):	
Spindle 6, speed 10 rpm	60,000 to 100,000

Part B Properties

Color, maximum	Gardner 3
Filler Content, %	0
Density, @ 25 °C, g/cm ³	1.0 to 1.02
Viscosity, Brookfield - RVF, 25 °C, mPa·s (cP):	
Spindle 1, speed 20 rpm	14 to 25

Mixed Properties

Pot Life @ 25 °C, minutes:	
200 g mass	80
Peak Exotherm Temperature, °C:	
200 g mass	115
Viscosity @ 25 °C, mPa·s (cP)	2,000

TYPICAL CURING PERFORMANCE

Recommended Curing Conditions

3 hours @ 60 °C (Recommended cure)
24 hours @ 22 °C (Alternate cure)

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Coefficient of Thermal Expansion ASTM D7012, K ⁻¹ :	
Pre Tg (Alpha 1)	53×10 ⁻⁶
Post Tg (Alpha 2)	119×10 ⁻⁶
Coefficient of Thermal Conductivity, ASTM C177, W/(m·K)	0.461

Shore Hardness, ISO 868, Durometer D	80 to 85
Density, @ 25 °C, g/cm ³	0.009
Linear Shrinkage, ASTM D792, %	0.5
Filler Content, %	43.5
Heat Deflection Temperature @ 1.8 N/mm ² , °C	85
Izod Impact Strength, N/mm of notch	0.08
Water Absorption, ISO 62, %:	
24 hours in water @ 25 °C	0.21
Specific Gravity @ 25 °C	1.5
Elongation, ISO 527-2, %	2.2
Tensile Strength, ISO 527-2	N/mm ² 58.6 (psi) (8,500)
Compressive Strength, ISO 604	N/mm ² 155.2 (psi) (22,500)
Compressive Yield Strength, ISO 604	N/mm ² 104.8 (psi) (15,200)
Flexural Strength, ISO 178	N/mm ² 106.9 (psi) (15,500)

Electrical Properties:

Dielectric Breakdown Strength, IEC 60243-1, kV/mm	59.1
Arc Resistance, ASTM D495, seconds	138
Volume Resistivity, IEC 60093, Ω·cm:	
@ 25 °C	4×10 ¹⁴
@ 80 °C	2×10 ¹⁰
Dielectric Constant / Dissipation Factor, IEC 60250:	
@ 25 °C:	
100 Hz	4.51 / 0.01
1 kHz	4.5 / 0.086
10 kHz	4.41 / 0.017
100 kHz	4.21 / 0.027
@ 80 °C:	
100 Hz	6.92 / 0.021
1 kHz	6.1 / 0.007
10 kHz	5.58 / 0.046
100 kHz	5.27 / 0.03

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.

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

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$

$\text{kV/mm} \times 25.4 = \text{V/mil}$

$\text{mm} / 25.4 = \text{inches}$

$\text{N} \times 0.225 = \text{lb}$

$\text{N/mm} \times 5.71 = \text{lb/in}$

$\text{N/mm}^2 \times 145 = \text{psi}$

$\text{MPa} \times 145 = \text{psi}$

$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$

$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$

$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$

$\text{mPa}\cdot\text{s} = \text{cP}$

Note

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