HYSOL® EE4215/HD6652

Formerly Dexter

High Impact, Low Viscosity,
Room Temperature Cure Casting

System

1.0 DESCRIPTION

EE 4215 / HD 6652 is a filled system offering improved thermal conductivity and increased resistance to heat and thermal shock. The filled system is recommended for most applications.

These products are recommended for potting where high impact strength is required, also where rigid or flexible wire leads protrude directly from the encapsulations. This system eliminates microscopic cracking on flexing of leads. It adheres extremely well to lead materials, such as vinyl or neoprene.

2.0 SPECIFICATIONS OF PRODUCT

		EE4215	HD6652	Test Method
Color		Black	Gardner 3	ASTM D 1544
Epoxy equivalent weight		335 - 440		ASTM D 1652
Filler content	%	48 - 52		ASTM D 2584
Hydrogen equivalent			8.5 - 9.5	HYSOL 14A
Specific gravity at 25°C	g/cm³			ASTM D 1475
Viscosity				ASTM D 2393
Brookfield RVF at 25°C	cps			
Spindle 5, Speed 20		10.000 - 16.000		
Spindle 6, Speed 10		60.000 - 100.000		
Spindle 1, Speed 20		14 - 25		
Shelf Life (25°C) (min. from date of shipment)	months	6	12	

3.0 TYPICAL CURED PROPERTIES

Values are not intended for use in preparation of specification. All measurements taken at 25°C unless otherwise noted.
NOTE: The resin base of these compounds meets the requirements of ASTM D 1763 specification for epoxy resins.

3.1 Cured Physical Characteristics

		EE4215 / HD6652	Test Method
Color			
Coeff. Of lin. Therm. Exp.			ASTM D 1674
α_1 (30 - 70°C) x 10^{-6}/K		53	
α_2 (70 - 90°C) x 10^{-6}/K		119	
Compressive Strength	psi	22 500	ASTM D 695
Compressive yield Strength	psi	15 200	ASTM D 695
Density	lb/in³	0.054	ASTM D 792
Elongation	%	2.2	ASTM D 638
Filler content	%	43.5	ASTM D 2584
Flexural Strength	psi	15 500	ASTM D 790
Hardness. Shore D		80 - 85	ASTM D 2240
Heat deflect. Temp. 264 psi	°C	85	ASTM D 648
Izod impact strength ft-lb/in. Of notch		0.44	ASTM D 256
Linear shrinkage	%	0.5	ASTM D 2566
Moisture Absorption (24 hours immersion)	%	0.21	ASTM D 570
Specific Gravity	g/cm³	1.50	ASTM D 792
Tensile Strength	psi	8 500	ASTM D 638
Thermal Conductivity cal x cm (sec x cm² x °C)		11 x 10^{-4}	ASTM D 1674

3.2 Cured Electrical Properties

		EE4215/HD3561	Test Method
Dielectric Strength 10 mil thickness	volts / mil	1500	ASTM D 149
Arc Resistance	sec	138	ASTM D 495

	EE4215/HD6652			
	25°C		80°C	
	K	D	K	D
100 Hz	4.51	0.010	6.92	0.021
1 KHz	4.50	0.086	6.10	0.007
10 KHz	4.41	0.017	5.58	0.046
100 KHz	4.21	0.027	5.27	0.030

Volume Resistivity ohm cm by ASTM D 257	4×10^{14}	2×10^{10}

K = Dielectric Constant by ASTM D 150
D = Dissipation Factor by ASTM D 150

TYPICAL CURE PROPERTIES OF EE 4215 / HD 6652

Climbing Drum Peel Strength: 20 LBs per linear inch. Test Method ASTM D 1781. Specimens cured 2 hours at 140°F (60°C), + 4 hours at 257°F (125°C).
Tensile Shear Strength: Test specimens used are 0.063" x 5" x 1" 2024-T3 aluminium per MIL-A-090E. One-half inch overlap chromic acid etched. Test Method ASTM D 1002.
Values are averages of several determinations and should be used as nominal with tolerances when preparing specifications

4.0 HANDLING

		EE4215/HD6652
Mix Ratio, parts by weight		100/15
Mix Ratio, parts by volume		100/24
Pot Life at 25°C (200g mass)	Minutes	80
Viscosity at 25°C	cps	10 000
Peak exothermic temperature (200 g mass)	°C	115

DE-air base, mix, de-air and cast. When using the rapid cure schedule:
(A) use only the filled system
(B) preheat the resin to 65°C
(C) use only in small masses.

* Mix Ratio of these materials is fixed by their chemistry. Any attempt to increase or decrease the cure rate by adding more or less hardener will result in degraded materials.

CURE SCHEDULE

Recommended cure: 3 Hours at 60°C
Alternate cure: 24 hours at room temperature. Some variation in listed values may occur; customer should determine whether cure other than recommended cure above will give satisfactory results.

5.0 SAFETY

DANGER: HD 6652 may cause serious skin burns. Do not get on skin or clothing, In case of contact, immediately flush skin with plenty of water for at least 15 Minutes. Remove and wash contaminated clothing before re-use.

CAUTION: EE 4215 may cause skin irritation. Avoid skin contact. If contact occurs, wash with soap and water at the first opportunity.

These products are classified according to "Guides for Classifying and Labelling Epoxy products According To Their Hazardous Potentialities" prepared and published by American National Standards Institute, Inc., 1430 Broadway, New York, N.Y. 10018.
See also Bulletin G1-100 "Suggested Precautions for Handling HYSOL Liquid Products".

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