

Haysite

Outstanding Characteristics & Typical Applications



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ETR- FR-C

Haysite's high performance material that meets NEMA GPO-3 requirements and exceeds NEMA in dielectric strength, arc resistance, and track resistance. This U.L. recognized grade is highly flame retardant & low smoke generating. ETR- FR-C is an IEEE 130°C electrical / 160°C mechanical Class B material. Applications include high voltage appliance insulators, bus bar supports, and barriers in switchgear.

ULTRATRAC® H950

This new generation of high performance material meets or exceeds all requirements for NEMA GPO-2 or GPO-3. ULTRATRAC® H950 is recognized as a U.L. 94V-0 material offering greater arc and track protection. Testing at an independent laboratory shows H950 to be non- toxic as defined by MIL-M-14H. Excellent flame resistance & low smoke generation is also characteristic of this material. ULTRATRAC® H950 carries a U.L. thermal recognition of 160°C electrical/150°C mechanical. This is the highest rating ever assigned to a flame retardant glass polyester laminate. Applications are typical for GPO-3 materials, but also include components for transportation where flame, smoke, and toxicity are of great concern.

HST 11

The benchmark in the industry for high temperature polymeric materials that all others are measured against. HST-II carries a UL thermal recognition of 220°C in electrical applications & 210°C in mechanical applications for thicknesses of 3.2mm or more. This is the highest thermal index for a thermoset polyester that Underwriters Laboratories have ever granted. HST-II also qualifies as an IEEE 220°C class R material. For use in elevated temperature applications where a high strength NEMA GPO-1 is required.

H515

H515 exhibits excellent flexibility and retention of electrical properties at elevated temperatures. For use in 220°C insulation systems in dry type transformers and elsewhere where flexibility and high temperature is required.

Continued overleaf

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Associated Gaskets

<i>ETR-FR-C</i>			
<i>GENERAL</i>	<i>Test Method</i>	<i>Units</i>	<i>Value</i>
NEMA Standards			GPO-3
ASTM Standards			D-1532-67T
Government Specifications			MIL-P-24364
Color, Standard			Red
Thickness: Minimum-Maximum	-	mm	0.8 to 50.8
<i>PHYSICAL</i>			
Barcol Hardness	Barcol	Barcol Scale	64
Specific Gravity	D-792	-	1.83
Density	-	Lbs./cu. in.	.066
Water Absorption	D-570	%	0.20
UL Flammability, File No. E81893	UL94	Class	94V-0
Flame Resistance			
Ignition Time	D-229-11	Seconds	100
Burning Time	D-229-11	Seconds	20
Radiant Panel	E-162	Flame Spread	1.3
Smoke Density at 4.0 minutes, Flaming	NFPA-258**	Optical Density	40
Tunnel Test 1/4" Thick	E-84	Flame Spread	<25
Temperature Class*	-	°C	130
<i>MECHANICAL</i>			
Tensile Strength	D-638	PSI	9,400
Flexural Strength	D-790	PSI	21,000
Flexural Modules of Elasticity	D-790	X10 ⁶ PSI	1.59
Compressive Strength	D-695	PSI	35,000
Bond Strength, 1/2" Thick	D-229	PSI	1,400
Shear Strength	D-732	PSI	14,000
Impact Strength, Izod, Edgewise	D-256	Ft.lbs./In.notch	8.0
<i>ELECTRICAL</i>			
Dielectric Strength, Short Time in oil 1/16"	D-149	VPM	450
Dielectric Strength, =Step-by-step	D-149	KV	55.0
Arc Resistance	D-495	Seconds	185
Comparative Track Index	CTI	Seconds	500+
Incline Plane Track Resistance - 1/4" Thick	D-2303	Minutes	500
Dielectric Constant @ 60 HZ	D-150	-	4.73
Dielectric Constant @ 1 MHZ	D-150	-	4.69
Dissipation Factor @ 60 HZ	D-150	-	.016
Dissipation Factor @ 1 MHZ	D-150	-	.011

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*Approximate Temperature Class is listed. Actual Classification depends on end use and location of the material in a complete system.

Unless otherwise noted, all properties are based on 1/8" thick test samples.

**National Fire Protection Association

Unless otherwise indicated, all properties published are based on tests performed on standard ASTM test samples and according to ASTM test methods. Values shown are for test samples made from production materials and they are believed to be conservative. No warranty is to be construed, however. In fabricated or molded form, parts may vary considerable from this standard test data. Where specific or unusual applications arise, test should be made on actual parts, and test procedures agreed upon between Haysite Reinforced Plastics and the customer.