



## GPO-1, GPO-2, GPO-3 Material Data Sheets

DATA	TEST METHOD	UNIT	NEMA GPO-1				NEMA GPO-2		NEMA GPO-3		
			ETS	EHC	H755	HST II	H722	ETS-FR-II	ETR-FR-C	H900	H950
<b>GENERAL</b>											
Gov't Specs	--		LP-509 I-24768/6	LP-509 I-24768/6	LP-509 I-24768/6	--	LP-509 I-24768/6	LP-509 I-24768/6	I-24768/6	I-24768/6	I-24768/6
Standard Color	--		Buff	Brown	Ivory	Lt Brown	Natural	Red	Red	Red	Red
Available Thickness	--	Inches	.032" - 2.00"	.032" - 2.00"	.032" - 2.00"	.032" - 2.00"	.032" - 2.00"	.032" - 2.00"	.032" - .090"	.090" - 2.00"	.090" - 2.00"
<b>PHYSICAL</b>											
Barcol Hardness	Barcol	Scale	46	74	48	52	46	46.00	64	62	62
Specific Gravity	D-792		1.87	2.00	1.80	1.62	1.87	1.84	1.83	1.80	1.80
Density, Lbs/In3		Lbs/Cu. In.	0.067	0.072	0.065	0.058	0.067	0.065	0.066	0.065	0.065
Water Absorption, %	D-229	%	0.60	0.31	0.35	0.30	0.60	0.20	0.20	0.20	0.20
UL Flammability, File# E81893	UL94	Class	--	--	--	HB	--	94V-0	94V-0	94V-0	94V-0
Flame Resistance, Seconds											
Ignition Time	D-229	Seconds	57	83	103	77	57	93	100	130	130
Burning Time	D-229	Seconds	328	221	211	256	328	27	20	33	33
Radiant Panel	E-162	Flame Spread	--	--	--	--	--	--	1.3	5.0	5.0
Smoke Density at 4.0 minutes, flaming	E-662	Optical Density	--	--	--	--	--	--	40	0.33	0
Tunnel Test, 1/4" Thickness	E-84	Flame Spread	--	--	--	--	--	--	<25	<25	<25
Temperature Class*	--	Degrees C	130	155	155	220	130	130	130	160	160
<b>MECHANICAL</b>											
Tensile Strength, PSI	D-638	PSI	10,000	13,000	11,000	13,000	10,000	10,000	9,400	9,000	11,000
Flexural Strength, PSI	D-790	PSI	23,000	27,000	25,000	25,000	18,000	21,000	21,000	18,000	25,000
Modulus of Elasticity in Flexure, PSI	D-790	X106PSI	1.00	1.71	1.60	1.70	1.00	1.00	1.59	1.50	1.50
Compressive Strength, PSI	D-695	PSI	30,000	44,000	40,000	33,000	32,000	30,000	35,000	30,000	30,000
Bond Strength, 1/2" Thickness, PSI	D-229	PSI	1,250	2,000	1,200	1,400	1,250	1,500	1,400	1,400	1,400
Shear Strength, PSI	D-732	PSI	14,000	18,000	15,000	14,000	14,000	14,000	14,000	14,000	14,000
Impact Strength, Izod Edgewise	D-256	Ft lbs/In. Notch	8.0	11.5	8.5	10.1	8.0	8.0	8.0	8.0	9.5
<b>ELECTRICAL</b>											
Dielectric Strength, ^, Short Time In Oil 1/16", VPM	D-149	VPM	500	325	500	400	500	550	450	450	525
Dielectric Strength, Parallel, Step-By-Step In Oil, KV	D-149	KV	54.0	62.0	60.0	62.0	54.0	60.0	55.0	55.0	55.0
Arc Resistance, Seconds	D-495	Seconds	150	180	150	150.0	150	180	185	190	194
Comparative Track Index	CTI	Seconds	--	--	--	500+	--	500+	500+	600+	600+
Inline Plane Track Resistance -	D-2303	Minutes	--	--	--	--	--	500	1000	>1000	>1000
Dielectric Constant @ 60HZ	D-150		4.80	4.67	1.80	4.20	4.80	4.40	4.73	5.20	5.20
Dielectric Constant @ 1MHZ	D-150		4.30	4.30	--	--	4.30	--	4.69	--	--
Dissipation Factor @ 60Hz	D-150		0.015	0.019	0.02	0.01	0.015	0.019	0.016	0.06	0.06
Dissipation Factor @ 1MHZ	D-150		0.011	0.013	--	--	0.011	--	0.011	--	--

### Haysite Grades of GPO-3:

#### Standard GPO-3 Grade is H900

**H900** is recognized throughout the world as a reliable, consistent GPO-3 material. Standard size sheets are available in thicknesses ranging from .094" to 2.00". H900 also exhibits excellent smoke, flame and toxicity characteristics. Govt. Spec I-24768/6. Standard color - red.

**ETR-FR-C** - high performance material that meets NEMA GPO-3 requirements and exceeds NEMA in dielectric strength, arc resistance, and track resistance. This UL recognized grade is highly flame retardant and low smoke generating. ETR-FR-C is a IEEE 130° C electrical / 160° mechanical Class B material. Applications include high voltage appliance insulators, bus bar supports, and barriers in switchgear. Available in thicknesses .032" - 2.00". Standard color - Red. Meets Gov't Spec - I-24768/6.

**ULTRATRAC H950** meets or exceeds all requirements for NEMA GPO-3 type material. ULTRATRAC H950 is recognized by UL as a 94 V-O material and offers great arc protection (UL FILE E81893). Testing at an independent laboratory shows ULTRATRAC Grade H950 to be non-toxic as defined by Military Specification MIL M-14H. Excellent flame resistance and very low smoke generation is also characteristic of this material. Available thicknesses - .093" - 2.00". Standard color - Red. Meets Gov't Spec - I-24768/6.

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