

PH600 / PF800

PHENOLIC WITH EXCELLENT FST BEHAVIOUR

- ↗ Non-halogenated resin formulation
- ↗ Excellent FST behaviour
- ↗ Self-adhesive resin system for sandwich panel application
- ↗ Outstanding adhesion to core materials
- ↗ Adjustable tackiness and retarded flow during curing
- ↗ Low smoke density and no emission of toxic gases at fire conditions.
- ↗ Long shelf and shop life

INTRODUCTION

PH600 / PF800 phenolic resin is a halogen-free and self-adhesive phenolic system designed for wide variety of manufacturing processes, retarded flow during curing, excellent heat-release and smoke-density properties.

Composite structures are self-extinguishing under fire conditions. Monolithic structures can be easily manufactured with this prepreg. The curing can be performed by press, vacuum and autoclave moulding with a pressure of at least 0.7 bar / 10 psi.

PH600 / PF800 prepreg is suitable for:

- ↗ Aviation and aerospace industries
- ↗ Machine industries
- ↗ Marine and automotive applications
- ↗ Railway transport systems

Gurit manufactures this resin system at two sites using the following naming conventions:

- ↗ Gurit Kassel: PH600
- ↗ Gurit Zullwil: PF800

PRODUCT INFORMATION

Please consult your local sales contact for further information. Full contact details can be found at www.gurit.com.

PROPERTY	296G 8HS	TEST STANDARD
Resin	Phenolic	-
Volatile	< 8.0 %	EN 2330 (180°C/10min)
Resin Flow	> 15 % (5 plies, 140°C, 10 min, 4 bar)	EN 2332
Tackiness	Adjustable Tack	-
Service Temperature (Cured State)	-55°C to +90°C (-67°F to 194°F)	-
Typical Roll Length	50 m / 55 yd	-

PREPREG PROPERTIES

TRANSPORT & STORAGE

When stored sealed & out of direct sunlight.

All prepreg materials should be stored in a freezer when not in use to maximise their useable life, since the low temperature reduces the reaction of resin and catalyst to virtually zero. However, even at -18°C (0°F), the temperature of most freezers, some reaction will still occur. In most cases after some years, the material will become unworkable.

STORAGE TEMP		UNIT	VALUE
-18°C	0°F	months	6
+21°C	+70°F	days	60

HEALTH AND SAFETY

Please refer to product SDS for up to date information specific to this product.

QUALIFICATIONS / FIRE PERFORMANCE

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For a full list of Aerospace qualifications please refer to the Aerospace Grade Prepregs brochure available from www.Gurit.com.

CURING CONDITIONS

PROPERTY	STANDARD CURE			TEST STANDARD
Cure Process	Press / Autoclave / Vacuum-bag			-
Cure Pressure	0.7 – 4 bar / 10 – 58 psi			-
Heat-up Ramp Rate	Max 3°C / 5.4°F per min			-
Dwell Temperature	125°C (257°F)	135°C (275°F)	155°C (311°F)	-
Dwell Time	120 min	75 min	30 min	-
Cool-down Ramp Rate	4°C per min / 7.2°F per min			-
Remove material at	< 60°C / 140°F			-

TYPICAL LAMINATE PROPERTIES

All data presented in this datasheet is based on the mechanical testing of a single batch of material.

MECHANICAL PROPERTIES AT ROOM TEMPERATURE (21°C / 70°F)

PROPERTY	SYMBOL	296g 8HS STYLE 7781		TEST STANDARD
0° Flexural Strength	X _F	470 MPa	68 Ksi	ISO 178
0° Flexural Modulus	E _{F11}	19 GPa	2.76 Msi	ISO 178
0° Tensile Strength	X _T	580 MPa	84 Ksi	ISO 527-4
0° Interlaminar Tensile Shear Strength	X _{ILTSS}	-	-	AITM 1.0019
0° Interlaminar Shear Strength	X _{ILSS}	15 MPa	2.18 Ksi	DIN 65148
Climbing Drum Peel*	σ _{PEEL}	90 N/75 mm*		EN 2243-3
Bending Load*	F _{BENDING}	750 N*		AITM 1.0018
Glass Transition Temperature	T _g	140°C	284°F	ISO 6721 (DMA)

*sandwich structure: 2 plies per side; core 3.2-48kg/m³ 9.4mm (honeycomb)

MECHANICAL PROPERTIES AT 80°C (176°F)

PROPERTY	SYMBOL	296g 8HS STYLE 7781		TEST STANDARD
0° Flexural Strength	X _T	320 MPa	46 Ksi	ISO 178
0° Flexural Modulus	E _{T11}	16 GPa	2.32 Msi	ISO 178
0° Tensile Strength	X _T	230 MPa	33 Ksi	ISO 527-4
0° Interlaminar Tensile Shear Strength	X _{ILTSS}	-	-	AITM 1.0019
0° Interlaminar Shear Strength	X _{ILSS}	12 MPa	1.74 Ksi	DIN 65148
Climbing Drum Peel*	σ _{PEEL}	80 N/75 mm*		EN 2243-3
Bending Load*	F _{BENDING}	550 N*		AITM 1.0018

*sandwich structure: 2 plies per side; core 3.2-48kg/m³ 9.4mm (honeycomb)

BURN BEHAVIOUR

PROPERTY	296g 8HS STYLE 7781	TEST STANDARD
Flammability vertical, 60s flaming – Burn length	< 130mm	AITM 2.0002A
Flammability vertical, 60s flaming – After flame time	0 s	AITM 2.0002A
Flammability vertical, 60s flaming – After flame time of drips	0 s	AITM 2.0002A
Max. specific optical smoke density within 4 min (flaming mode)	35 Ds	AITM 2.0007A
Heat Release	40 kW/m ²	AITM 2.0006
Heat Release Rate	65 kW.min/m ²	AITM 2.0006
Determination of the toxic components on combustion products	1 / 80 / 1 / 1 / 0 / 0 ppm (HCN / CO / NO _x / SO ₂ / HF / HCl)	AITM 3.0005 (flaming mode)

NOTICE

All advice, instruction or recommendation is given in good faith but the Company only warrants that advice in writing is given with reasonable skill and care. No further duty or responsibility is accepted by the Company. All advice is given subject to the terms and conditions of sale (the Conditions) which are available on request from the Company or may be viewed at the Company's Website: www.gurit.com/terms-and-conditions.aspx.

The Company strongly recommends that Customers make test panels and conduct appropriate testing of any goods or materials supplied by the Company to ensure that they are suitable for the Customer's planned application. Such testing should include testing under conditions as close as possible to those to which the final component may be subjected. The Company specifically excludes any warranty of fitness for purpose of the goods other than as set out in writing by the Company. The Company reserves the right to change specifications and prices without notice and Customers should satisfy themselves that information relied on by the Customer is that which is currently published by the Company on its website. Any queries may be addressed to the Technical Services Department.

Gurit are continuously reviewing and updating literature. Please ensure that you have the current version, by contacting Gurit Marketing Communications or your sales contact and quoting the revision number in the bottom right-hand corner of this page.

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