



PT5760

High Temperature Infusion Resin Systems

DESCRIPTION

PT5760 A/B is a two-part epoxy system using the latest resin technology, designed for infusing composite tools for service temperatures of 400° F. and above. This product is ideal for the vacuum-assisted resin transfer molding (VAR-TM) process, due to it's low viscosity, excellent wet-out properties, and long working time. PT5760 A/B offers high heat resistance and mechanical properties, and will provide durable, dimensionally stable, high-temperature infused tools.

PRODUCT SPECIFICATIONS

	PT5760-A	PT5760-B	ASTM Method
Color	Amber	Clear	Visual
Viscosity,	1,660 cps	120 cps	D2392
Specific Gravity, gms./cc	1.17	0.94	D1475
Mix Ratio, By Weight By Volume	100 : 50 100 : 62		PTM&W
Pot Life, 4 fl.oz. Mass @ 77°F	10.6 hours		D2471

HANDLING and CURING

The resin and hardener components combine readily and infuse the reinforcing fabric quickly and thoroughly. After completion of infusion, cure a minimum of overnight at 150°F (65°C). If lower curing temperatures are required, because of the limitations of the model construction, for example, then at least 24 hours at lower temperatures such as 115°F - 120°F (45°C - 50°C) are necessary. Generally, the lower the initial curing temperature, the longer will be the required cure time.

After the initial cure, a post cure is required to achieve maximum cured properties. The properties in this bulletin were derived with specimens prepared with the following cure cycle: Overnight @ 150°F, followed by an oven post cure of 1 Hour each at 200°F, 250°F, 300°F, 350°F, and 2 hours @ 400°F. As with the initial curing period, variations from this recommended cure cycle will require adjusted times at each incremental step in the cure cycle. For example, if the cycle starts at a lower temperature, than longer time should be given at the first two steps. Further, if fewer steps are used in the chosen cure cycle, then at least an extra hour should be added at each step.

STORAGE GUIDELINES

The shelf life of PT5760 Part A is 6 months when stored at 70°F or lower. Lower temperatures will prolong shelf life, while storage at higher temperatures will shorten shelf life. The shelf life of PT5760 Part B is 12 months when stored dry in the original containers from 60°F to 90°F. Both resin and hardener components must be protected from moisture. Reseal opened containers with a dry nitrogen purge after each use.

PACKAGING WEIGHTS

	Gallon Evaluation Kit	Pail Kit	Drum Kit
PT5760 Part A	7 lb.	37 lb.	475 lb.
PT5760 Part B	3.5 lb.	18.5 lb.	238 lb.
Kit	10.5 lb.	55.5 lb.	713 lb.

TYPICAL MECHANICAL PROPERTIES

	PT5760 A / B ⁽¹⁾		ASTM Method
Color	Amber		Visual
Mixed Viscosity, centipoise	690 cps		D2393
Pot Life, 4 fl. Oz. Mass, @77°F	10.6 hours		D2471
Cured Hardness, Shore D	87-88 Shore D		D2240
Cured Specific Gravity, grams, cc	1.082		D1475
Density, lb./cu. Inch lb. / gallon	0.0391 9.03		D792
Specific Volume, cu. in./lb.	25.59		
CAST SAMPLES	Cast Samples		
Tensile Strength, psi, (MPa)	5,927 psi (40.9 MPa)		D638
Elongation at Break, %	1.13%		
Tensile modulus, psi, (MPa)	585,840 psi (4,039.4 MPa)		
Flexural Strength, psi, (MPa)	17,118 psi (118 MPa)		D790
Flexural Modulus, psi, (MPa)	544,697 psi (3,755.7 MPa)		
LAMINATED SAMPLES	7781 Glass Fabric⁽²⁾	5HS Carbon Fabric⁽³⁾	
Tensile Strength, psi, (MPa)	37,180 psi (256.4 MPa)	65,551 psi (451.97 MPa)	D638
Elongation at Break, %	1.32%	0.73%	
Tensile modulus, psi, (MPa)	2,806,819 psi (19,35. MPa)	9,091,785 psi (62,688 MPa)	
Flexural Strength, psi, (MPa)	74,188 psi (511.5 MPa)	94,990 psi (654.9 MPa)	D790
Flexural Modulus, psi, (MPa)	3,251,914 psi (22,422 MPa)	7,009,190 psi (48,328.4 MPa)	
Compressive Strength, psi, (MPa)	20,347 psi (140.3 MPa)		D695
Compressive Modulus, psi, (MPa)	453,163 psi (3,124.6 MPa)		
Glass Transition Temp., DMA: E' (Onset) Tg (Peak)	367.9°F (188.1°C) 423.3°F (219.1°C)		D4065

(1) Properties in this bulletin were derived with specimens prepared with the following cure cycle: Overnight @ 150°F, followed by an oven post cure of 1 Hour each at 200°F, 250°F, 300°F, 350°F, and 2 hours @ 400°F.

(2) Infused Samples Consisting of 12 Plies 7781 Glass Fabric, 0° - 90° Orientation, with 30% Resin Content.

(3) Infused Samples Consisting of 6 Layers 5 Harness Satin Carbon Fabric, 0° - 90° Orientation, with 34% Resin Content.

SAFETY and HANDLING

PTM&W epoxy products are made from raw materials carefully chosen to minimize or even eliminate toxic chemicals, and therefore offer the user high performance products with minimum hazard potential when properly used. Generally, the PTM&W epoxy resins and hardeners will present no handling problems if users exercise care to protect the skin and eyes, and if good ventilation is provided in the work areas. However, breathing of mist or vapors may cause allergenic respiratory reaction, especially in highly sensitive individuals. As such, avoid contact with eyes and skin, and avoid breathing vapors. Wear protective rubber apron, clothing, nitrile rubber gloves, face shield or other items as required to prevent contact with the skin. In case of skin contact, immediately wash with soap and water, followed by a rinse of the area with vinegar, and then a further wash with soap and water. The vinegar will neutralize the hardener and lessen the chances of long term effects. Use goggles, a face shield, safety glasses or other items as required to prevent contact with the eyes. If material gets into the eyes, immediately flush with water for at least 15 minutes and call a physician. Generally, keep the work area as uncluttered and clean as possible, and clean up any minor spills immediately to prevent accidental skin contact at a later time. Keep tools clean and properly stored. Dispose of trash and empty containers properly. Do not use any of these types of products until Material Safety Data Sheets have been read and understood.

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