



PT5712 & PT5714 Low Viscosity Systems for Parts or Tooling

DESCRIPTION

PT5712 and PT5714 are low viscosity epoxy resin systems that have found good acceptance for use in vacuum infusion fabrication and tooling processes. The low mixed viscosity of these systems allow them to penetrate the reinforcing materials easily and completely, producing a void-free, dense composite structure.

PT5712 and PT5714 have very good hot strength, so cured parts or tooling fabricated with them can provide good service in elevated temperature operating conditions. PT5714 is a black version of PT5712.

PRODUCT SPECIFICATIONS

	PT5712 & 14 Part A	Part B	Part B1	ASTM Method
Color	PT5712 - Amber PT5714 - Black	Amber	Amber	Visual
Viscosity,	1800 cps	40 cps	50 cps	D2392
Specific Gravity, gms./cc	1.14	0.96	0.95	D1475
Mix Ratio By Weight	100 : 20 By Weight			PTM&W
Pot Life, 4 fl.oz. Mass @ 77°F		80 - 90 minutes	175 - 185 minutes	D2471

HANDLING and CURING

There are two hardeners available for use with these resins, for different size applications, and both hardeners will gel at at normal shop temperatures. In the thin film of the infusion process, the material will gel hard in 18 to 24 hours at these temperatures. At this point, the laminate must be post cured to complete its cure and develop full physical properties and heat capabilities. A typical post cure would be: Gel at room temperature, followed by an oven post cure of 3 to 4 hours each at 150°F and 250°F, followed by a final cure of at least 8 hours at 300°F. If the final curing temperature can be increased to 375°F instead of 300°F, then 4 to 6 hours at the 375° temperature will complete the cure.

PACKAGING WEIGHTS

	Gallon Kit	Pail Kit	Drum Kit
PT5712 or PT5714 Part A	8 lb.	40 lb.	500 lb.
Part B or B1	1.6 lb.	8 lb.	105 lb. (3 @ 35 lb. ea.)
Kit	9.6 lb.	48 lb.	605 lb.

TYPICAL MECHANICAL PROPERTIES

	PT5712 or PT5714 A with B or B1	ASTM Method
Color	PT5712 - Amber PT5714 - Black	Visual
Mixed Viscosity, centipoise @ 77°F @ 90°F	575 cps 400 cps	D2393
Cured Hardness, Shore D	84 Shore D	D2240
Specific Gravity, grams, cc	1.105	D1475
Density, lb. / cu. in. lb. / gallon	.0399 9.23	D792
Tensile Strength, psi ⁽¹⁾ Laminate - 10 oz. (7500) Fabric Laminate - 8 oz. (181) Fabric ¹	37,100 pdi 46,970 psi	D638
Elongation at Break, % ⁽¹⁾ Laminate - 10 oz. (7500) Fabric Laminate - 8 oz. (181) Fabric ¹	2.1 % 1.6 %	
Tensile modulus, psi ⁽¹⁾ Laminate - 10 oz. (7500) Fabric Laminate - 8 oz. (181) Fabric ¹	3,988,675 psi 3,197,430 psi	D790
Flexural Strength, psi ⁽¹⁾ Laminate - 10 oz. (7500) Fabric Laminate - 8 oz. (181) Fabric ¹	59,110 psi 74,727 psi	
Flexural Modulus, psi ⁽¹⁾ Laminate - 10 oz. (7500) Fabric Laminate - 8 oz. (181) Fabric ¹	2,612,766 psi 3,345,683 psi	D695
Compressive Strength, psi	15,007 psi	
Compressive Modulus, psi	384,653 psi	D256
Izod Impact Strength, ft-lbs / in of Notch, Method A - Notched	1.7	
Glass Transition Temperature, DMA: Tg Onset (E') Peak	272°F 302°F	D4065
Coefficient of Thermal Expansion, Range 40°C to 60°C	3.755 x 10 ⁻⁵ in./in./ °F	D696

⁽¹⁾ Tensile and Flexural Properties were Determined with .125" Laminates Made By Resin Infusion Process with Style 7500, 10 oz. Tooling Cloth and Style 181, 8 oz. Industrial Fabric.

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 allergic 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.

