



PT2179 White Laminating System for Economical, Stable Tooling

DESCRIPTION

PT2179 is a white room temperature service epoxy laminating resin intended for use in producing a wide variety of tools and fixtures. The cured properties of this system are quite good. Tooling made with it exhibits very good long term dimensional stability. Two hardeners are available for use with PT2179 resin, for different shop conditions and applications. PT2179 B has a 30 minute working time, and is better suited for warmer temperature use or for thicker laminates where the added mass develops sufficient heat to fully cure the system at cooler room temperatures. PT2179 B1 hardener has a 20 minute working time and will cure completely in thinner laminates, and at times when the Part B hardener might be too slow.

The mixed viscosity with both of these hardeners is low enough to allow thorough penetration of the tooling fabric without any drain from sharply contoured surfaces. The PT2179 system has been designed to allow the construction of tooling very economically. This economy does not require compromises, as the cured product has excellent properties.

PRODUCT SPECIFICATIONS

	PT2179 Part A	PT2179 Part B	PT2179 Part B1	ASTM Method
Color	White	Amber	Amber	Visual
Viscosity, @77°F, centipoise	6,500 cps	400 cps	400 cps	D2392
Specific Gravity, gms./cc	1.50	1.05	1.07	D1475
Mix Ratio, By Weight		100 : 13	100 : 16	PTM&W
Pot Life, 4 fl.oz. Mass @ 77°F		30 minutes	20-25 minutes	D2471

HANDLING and CURING

PT2179 will cure completely with no heat added at normal ambient room temperatures. When the laminate size guidelines for the two hardeners as listed above are followed, at 77°F, 18 to 24 hours is usually sufficient cure time to allow handling of the laminate. Keep in mind that smaller, thinner laminates made with the Part B hardener will take longer to reach full cure than if the Part B1 hardener is used. The cures can be accelerated with heat if desired, however, heat curing will increase shrinkage in the cured material. For a typical heat cure cycle, allow the material to gel hard at room temperature, followed by an oven cure of 150°F for 1 to 2 hours.

TYPICAL MECHANICAL PROPERTIES

	PT2179 A/B	PT2179 A/B1	ASTM Method
Mix Ratio, By Weight	100 : 13	100 : 16	PTM&W
Color	White	White	Visual
Mixed Viscosity, @77°F, centipoise	5,000 cps	5,000 cps	D2393
Pot Life, 4 fl. Oz. Mass, @77°F	30 minutes	20 minutes	D2471
Cured Hardness, Shore D	91 Shore D	89 Shore D	D2240
Specific Gravity, grams, cc	1.43	1.48	D1475
Density, lb./cu. Inch	.0516	.0537	D792
Specific Volume, cu. in./lb.	19.4	18.6	
Tensile Strength, psi	26,390 psi	28,100 psi	D638
Elongation at Break, %	1.6 %	1.7 %	
Tensile modulus, psi	2.49 x 10 ⁶ psi	2.29 x 10 ⁶ psi	
Flexural Strength, psi	43,153 psi	41,740 psi	D790
Flexural Modulus, psi	2.73 x 10 ⁶ psi	2.16 x 10 ⁶ psi	
Compressive Strength, psi	17,600 psi	17,020 psi	D695
Glass Transition Temperature, DMA: T _g	196°F	197°F	D4065

PACKAGING WEIGHTS

	Pail Kit	Drum Kit	Hardener Drum
PT Part A	50 lb.	550 lb.	
PT Part B	6.5 lb.	2 @ 36 lb. ea.	360 lb.

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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