



PT4976 A/B Aluminum Filled High Temperature Casting System

DESCRIPTION

PT4976 is an epoxy casting system with exceptionally high heat resistance and very good physical properties. It has a high aluminum content, which gives it high compressive strength, tough, durable cured properties, and makes the finished castings very easy to machine if required. PT4976 performs quite well in a variety of demanding applications where the casting will be exposed to high loads and stresses at elevated temperatures.

PRODUCT SPECIFICATIONS

	PT4976 Part A	PT4976 Part B	ASTM Method
Color	Gray	Amber	Visual
Viscosity, @77°F, centipoise	400,000 cps*	3,000 cps	D2392
Specific Gravity, gms./cc	1.83	0.98	D1475
Mix Ratio	100 : 15 By Weight		PTM&W
Pot Life, 4 fl.oz. Mass @ 77°F	3 hours		D2471

*NOTE: PT4976 Part A has a very high aluminum content, and, as with all filled materials, there may be instances where the filler will settle out. As such, it is recommended that the Part A be stirred thoroughly before each use to redisperse the fillers to a uniform consistency.

HANDLING and CURING

PT4976 will gel at room temperature, but it is designed for and intended to be heat cured to obtain the high physical properties and heat resistance it is capable of. Therefore, an oven heat cure is mandatory for this product. The mixed viscosity of 40,000 centipoise plus the weight of the mixture enables PT4976 to flow well and pick up detail nicely. The long pot life allows plenty of time to release trapped air for solid, dense finished castings.

A typical cure cycle for PT4976 would involve an overnight cure at room temperature (77°F minimum), followed by an oven post cure of 2 to 3 hours each at 150°F, 250°F, 350°F, 400°F and finally 450°F. This cycle can be modified slightly to suit specific equipment requirements or time restraints, but always remember that it is important to give the casting sufficient heat cure time to reach full cured properties. In general, start the heat cure cycle as low as possible, and proceed with as many incremental steps as time and equipment permit, to obtain the best cured properties.

PACKAGING WEIGHTS

	Gallon Kit	Pail Kit
PT4976 Part A	13.25 lb.	53 lb.
PT4976 Part B	2 lb.	8 lb.
Kit	15.25 lb.	61 lb.

TYPICAL MECHANICAL PROPERTIES**

	PT4976 A/B	ASTM Method
Mix Ratio, By Weight	100 : 15	PTM&W
Color	Gray	Visual
Mixed Viscosity, @77°F, centipoise	40,000 cps	D2393
Pot Life, 4 fl. Oz. Mass, @77°F	3 hours	D2471
Cured Hardness, Shore D	90 Shore D	D2240
Specific Gravity, grams, cc	1.62	D1475
Density, lb./cu. Inch	0.0584	D792
lb. / gallon	13.49	
Specific Volume, cu. in./lb.	17.1	
Tensile Strength, psi	7,649 psi	D638
Elongation at Break, %	0.38 %	
Tensile modulus, psi	142,703 psi	
Flexural Strength, psi	16,325 psi (112.5 mPa)	D790
Flexural Modulus, psi	1,147,194 psi (7,909 mPa)	
Compressive Strength, psi	33,163 psi	D695
Compressive Modulus, psi	785,238 psi	
Izod Impact Strength, Method A, Notched, ft.lb./in. of notch	5.23	D256
Glass Transition Temperature, DMA: Tg, E' (Onset) Tg, Peak	370.6°F 443.5°F	D7028
Coefficient of Thermal Expansion, Range 50°C to 100°C	2.6334 x 10⁻⁵ in./in./ °F	D696

** The properties listed in this bulletin were obtained with a cure of: Overnight at 77°F, followed by 2 hours each at 200°F, 300°F, 350°F, 400°F and 450°F.

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.

