



PT4935 Aluminum Filled High Temperature Casting Resin

DESCRIPTION

PT4935 is a gray, aluminum filled epoxy resin that can be used for a wide variety of applications where good heat resistance is required. It has a relatively low viscosity, so it mixes and pours easily, and duplicates details very well without trapping air or leaving surface porosity. The aluminum filler in PT4935 makes it easy to machine when cured. This resin has been especially formulated to be virtually non-settling in long term storage. PT4935 provides accurate, dimensionally stable molds and tooling with very high physical properties. These features make PT4935 an ideal choice for constructing vacuum form molds, compression, injection and blow molds, stretch dies, low production dies; bonding, molding and nesting fixtures, patterns and core boxes, RTM tooling, general repairs and backup for metal sprayed surfaces. PT4935 utilizes the latest material technologies, it contains no hazardous classified or restricted ingredients, for improved safety in the work place.

PT4935 can be used with Part B hardener for smaller castings and where a faster cure is needed. Part B1 hardener has a longer pot life for slower cures and less shrinkage. The longer pot life allows ample time to add aluminum needle bulk filler if desired for cost savings and lower shrinkage in larger masses. Part B2 hardener has a very long working time that will allow the casting of larger masses without bulk fillers.

PRODUCT SPECIFICATIONS

	PT4935 Part A	PT4935 Part B	PT4935 Part B1	PT4935 Part B2	ASTM Method
Color	Gray	Amber	Amber	Amber	Visual
Viscosity, @77°F, centipoise	72,000 cps	1,700 cps	150 cps	200 cps	D2392
Specific Gravity, gms./cc	1.63	1.08	0.99	1.01	D1475
Mix Ratio		100 : 9.5	100 : 12	100 : 12	PTM&W
Pot Life, 4 fl.oz. Mass @ 77°F		40-50 min.	2.5-3.5 hr.	8-12 hr.	D2471

HANDLING and CURING

Castings made with Part B or Part B1 hardeners will gel hard at room temperature, and the castings can be demolded for further curing if desired. Care should be taken if the castings are to be demolded before post curing, as high temperature service hardeners typically give somewhat brittle cures at room temperature only. This is not as much a concern with Part B, but a definite consideration with Part B1. Hardener Part B2 is a very slow curing hardener, and castings made with it should be cured entirely on the master pattern. Castings using Part B should be allowed to cure at room temperature on the pattern for a minimum of 18 hours before post curing. Hardener Part B1 will require a 24 hour minimum room temperature cure on the pattern before post curing. Hardener Part B2 will require longer than 24 hours before post curing, the exact time being determined by the size of the casting and the amount of any bulk filler content.

An oven post cure is recommended for all castings for the maximum stability in service. A typical cure cycle would be: Gel for the required time at room temperature, plus 3 to 4 hours each at 150°F, 250°F and 350°F. This schedule represents the minimum recommended cure schedule. Longer time at room temperature followed by longer times at smaller incremental increases will usually result in lower shrinkage and less stress buildup in the finished castings.

TYPICAL MECHANICAL PROPERTIES

	PT4935 A/B	PT4935 A/B1	PT4935 A/B2	ASTM Method
Color	Metallic Gray			Visual
Mixed Viscosity, @77°F, centipoise	25,000 cps	11,000 cps	12,000 cps	D2393
Cured Hardness, Shore D	91 Shore D	91 Shore D	91 Shore D	D2240
Shrinkage, inch/inch, Mold #, Volume	.0047 in./in. Mold #1, 0.53 gal.	.0032 in./in. Mold #3, 1.23 gal.	.0018 in./in. Mold #3, 1.23 gal.	D2566
Specific Gravity, grams, cc	1.58	1.55	1.56	D1475
Specific Volume, cu. in./lb.	17.5	17.9	17.7	
Tensile Strength, psi	7,790 psi	8,255 psi	8,813 psi	D638
Elongation at Break, %	1.46 %	1.82 %	2.02 %	
Tensile modulus, psi	7.65 x 10 ⁵ psi	6.5 x 10 ⁵ psi	6.3 x 10 ⁵ psi	
Flexural Strength, psi	16,155 psi	16,136 psi	15,560 psi	D790
Flexural Modulus, psi	7.7 x 10 ⁵ psi	7.2 x 10 ⁵ psi	7.1 x 10 ⁵ psi	
Compressive Strength, psi	21,846 psi	21,440 psi	21,510 psi	D695
Glass Transition Temperature, Tg, TMA	285°F	358°F	358°F	D4065
Coefficient of Thermal Expansion, Range 50°C to 100°C	4.63 x 10 ⁻⁵ in./in./ °F	4.63 x 10 ⁻⁵ in./in./ °F	4.63 x 10 ⁻⁵ in./in./ °F	D696

PACKAGING WEIGHTS

	PT4935 A	PT4935 B	PT4935 A	PT4935 B1	PT4935 A	PT4935 B2
Quart Kit	3 lb.	.3 lb.				
Gallon Kit	12 lb.	1.16 lb.	12 lb.	1.5 lb.	12 lb.	1.5 lb.
Pail Kit	55 lb.	5.25 lb.	55 lb.	6.75 lb.	55 lb.	6.75 lb.
Drum Kit			600 lb.	2 @ 36 lb.	600 lb.	2 @ 36 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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