



PT8970 A/B

Shore D-70 Urethane for Parts and Assemblies

DESCRIPTION

PT8970 is a Shore D-70 urethane system that has a high degree of toughness, and excellent stability for this hardness range. It is a good material for various types of tools and fixtures. Panels and parts made with PT8970 have high impact strength and resistance to cracking, for long, durable service.

PRODUCT SPECIFICATIONS

	PT8970 Part A	PT8970 Part B	PT8970 Part B1	ASTM Method
Color	Clear	Amber*	Amber*	Visual
Viscosity,	1,250 cps	1,150 cpa	1,150 cps	D2392
Specific Gravity, gms./cc	1.145	1.073	1.073	D1475
Mix Ratio, By Wt. - Natural Versions Black Versions	--	100 A to 100 B or B1 By Weight 100 A to 102 B or B1 By Weight		PTM&W
Pot Life, 4 fl.oz. Mass @ 77°F	--	9 - 9.5 min.	3 - 4 minutes	D2471

* There are black versions of the two PT8970 hardeners that provide a black cured material. The mix ratio for both black hardeners is 100 : 102 By Weight, and the pot life of each is unchanged. The materials should be ordered by specifying: PT8970 A/B or B1 Natural or Black

HANDLING and CURING

The 9 minute pot life version of PT8970 works quite well in hand mix and pour applications, allowing plenty of time to mix and deair before pouring, as the system components combine readily and flow into thin sections easily, minimizing pouring time. When using the faster, Part B1 version of PT8970, the system is more suited to cartridge and/or machine dispensing.

The mixed PT8970 should be poured into a warm mold (heated to 110°F - 140°F) and given an initial oven heat cure before demolding. The material can be demolded after a minimum of 1.5 to 2 hours at 150°F to 160°F, and then the cure can be completed out of the mold. An oven post cure is required to achieve maximum cured properties and the highest heat resistance. If the part has relatively thick wall sections and a flat surface it can be positioned on, then it can be post cured unsupported in the oven. However, if there are thin walls or standing sections, the part should be supported on a fixture in the oven for the post cure. It is advisable to support the part in the mold or on a fixture in all cases, for repeatable good results.

As to processing: Minimum curing time will depend upon the part thickness, mold type and construction, and curing temperature. For example, maximum cured properties as listed in this bulletin were obtained with an initial cure of 1.5 hours at 150°F, followed by an overnight cure at a temperature of 180°F. If the post curing temperature is lower, 150°F, for example, the cure time will take longer to achieve these properties, and test cures should be run to determine the cure time required for the specific part configuration.

TYPICAL MECHANICAL PROPERTIES

	PT8970 Part A with Part B or B1	ASTM Method
Mix Ratio, By Weight - Natural Versions By Weight - Black Versions	100 A to 100 B or B1 By Weight 100 A to 102 B or B1 By Weight	PTM&W
Color	Buff or Black	Visual
Mixed Viscosity, centipoise	1,800 cps	D2393
Working Time, 4 fl. Oz. Mass, @77°F	Part B - 9-9.5 min. Part B1 - 3-4 min.	D2471
Cured Hardness, Shore D	70 Shore D	D2240
Specific Gravity, grams, cc	1.108	D1475
Density, lb./cu. Inch	.0400	D792
Specific Volume, cu. in./lb.	24.99	
Tensile Strength, psi	5,314 psi	D638
Elongation at Break, %	90 %	
Tensile modulus, psi	113,110 psi	
Flexural Strength, psi	4,896 psi	D790
Flexural Modulus, psi	116,091 psi	
Compressive Strength, psi	8,730 psi	D695
Compressive Modulus, psi	113,937 psi	
Izod Impact Strength, ft.lbs./inch of Notch, Method A, Notched	4.40	D256
Glass Transition Temp., Tg, DMA:Cured Overnight @ 150°F Cured Overnight @ 180°F	262°F 300°F	D4065
Tear Strength, Die C, pli	554 pli	D624
Compression Set, Method B	89.1 %	D395
Bashore Rebound	39.8 %	D2632
Taber Abrasion, H18 Wheel, 1000 grams, 1000 cycles, mg loss	59.3 mg	D1044

PACKAGING WEIGHTS

	Gallon Kit	Pail Kit	Drum Kit
PT8970 Part A	8 lb.	40 lb.	400 lb.
PT8970 Part B or B1 (Natural)	8 lb.	40 lb.	400 lb.
PT8970 Part B or B1 (Black)	8.2 lb.	41 lb.	410 lb.

SAFETY and HANDLING

PTM&W urethane 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 urethane 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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PTM&W Industries, Inc.

10640 S. Painter Avenue Santa Fe Springs, CA 90670-4092

562-946-4511 800-421-1518 FAX: 562-941-4773

Visit Us At: www.ptm-w.com Send Questions To: info@ptm-w.com