PT8908

Black Heat Resistant Urethane for Prototype and Production Parts

DESCRIPTION

PT8908 is a low viscosity, modified polyurethane system designed for machine dispensing applications for the fast, efficient production of tough, durable castings and parts. This system is a modification of our PT8907, and has a longer pot life with lower viscosity, to allow the casting of larger parts. It has a low mixed viscosity which allows easy mold filling into thin cross-sections with low pressure. It develops strength very quickly, and allows fast demold times for more cycles per day.

The cured material is very tough and can be demolded without fear of breakage. It is not brittle in thin sections! The heat resistance of PT8908 is very good, therefore, a broad range of part types can be considered with PT8908, as it will withstand exposure to heat better than other materials of this type. PT8908 is a tougher, more versatile product than previously available materials for this application.

PRODUCT SPECIFICATIONS

	PT8908 Part A	PT8908 Part B or B1 *	ASTM Method
Color	Dark Amber	Part B-Black, Part B1-Natural	Visual
Viscosity,	240 cps	2,000 cps	D2392
Specific Gravity, gms./cc	1.19	1.01	D1475
Mix Ratio		80A to 100B By Wt.; 67A to 100B By Vol.	PTM&W
Pot Life, 4 fl.oz. Mass @ 77°F		70 - 75 seconds	D2471

* Two Parts B are available for use with PT8908: Part B is Black, for a glossy, rich black part; Part B1 is natural to allow easier pigmenting for various colored parts. Cured properties are the same with both hardener

HANDLING and CURING

PT8908 is capable of curing at room temperature, however, it is usually cured at elevated temperatures for faster production rates and better cured properties. The system develops toughness rapidly in the mold, so it can be demolded without breakage quickly -- as soon as 10 minutes for some part configurations. The part is then allowed to cure, either at ambient temperatures or with heat. In all curing situations, parts should be allowed to cure with a minimum of applied stress, to prevent distortion. If the part has a flat side, or surface upon which it can rest during cure, it is usually not necessary to utilize holding fixtures for room temperature curing. If the part design is such that there is no good base or flat plane on which it can sit, then some sort of fixture is probably a good idea.

Full properties are developed with a room temperature cure in 6 to 7 days, though for many applications, sufficient cure for service is achieved sooner than this. Part size, shape and thickness all influence the cure rate, so evaluation is necessary to determine the exact amount of room temperature cure necessary. For applications that require the maximum cured properties, a heat cure is necessary to achieve the best results. A heat cure is mandatory for applications where parts will be subjected to elevated temperatures in service. After the part is demolded at room temperature, it should be allowed to stabilize for a period of time, then oven cured in a supported condition. Recommended oven cure cycles are: [A] Overnight (14 to 16 hours) at 175°F, or, [B] 4 hours at 175°F (80°C), plus 4 hours at 212°F (100°C).

TYPICAL MECHANICAL PROPERTIES

	PT8908 A / B or B1	ASTM Method
Mix Ratio, By Weight By Volume	80A to 100B By Weight 67A to 100B By Volume	PTM&W
Color	With Part B-Black; With B1-Natural	Visual
Working Time, 4 fl. Oz. Mass, @77oF	70 - 75 seconds	D2471
Cured Hardness, Shore D	75 Shore D	D2240
Specific Gravity, grams, cc	1.08	D1475
Density, lb./cu. Inch lb. / gallon	.0393 9.07	D792
Specific Volume, cu. in./lb.	25.5	
Tensile Strength, psi	5,407 psi	D638
Elongation at Break, %	7.3 %	
Tensile modulus, psi	175,257 psi	
Flexural Strength, psi	6,759 psi	D790
Flexural Modulus, psi	171,605 psi	
Compressive Strength, psi	7,190 psi	D695
Compressive Modulus, psi	547,500 psi	
Izod Impact Strength, ft.lbs./inch of Notch, Method A, Notched	1.13	D256
Glass Transition Temperature, DMA: Tg (Peak)	298^{O}F	D4065
Heat Deflection Temperature, @ 66 psi Load @ 264 psi Load	248^{O}F 207^{O}F	D648
Coefficient of Thermal Expansion, Range 50^{O}C to 100^{O}C	8.56 x 10^{-3} in./ in./ ^{O}F	D696

PACKAGING WEIGHTS

	Gallon Kit	Pail Kit	Drum Kit
PT8908 Part A	6.4 lb.	32 lb.	360 lb.
PT8908 Part B or B1	8 lb.	40 lb.	450 lb.
Kit	14.4 lb.	72 lb.	810 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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