



PT8944 A/B

White Shore D-80 Urethane For Tough Castings & Displays

DESCRIPTION

PT8944 A/B is a hard rigid urethane designed specifically for hand pouring or mechanized casting of parts and display pieces. It has a mix ratio by weight of 1 to 1, which will allow easy measuring and mixing. The very low mixed viscosity of PT8944 will allow easy vacuum degassing, and makes it readily pourable into complicated molds, where it gives good reproduction of fine details. PT8944 cures to an opaque white solid, but since no pigments are incorporated into it, the system can be easily tinted or pigmented.

PT8944 is easily processed by hand pouring, or vacuum machine casting. It can be demolded rather quickly and it cures at room temperature. PT8944 is a product designed to provide easy fabrication of tough durable parts for a variety of applications and uses.

PRODUCT SPECIFICATIONS

	PT8944 Part A	PT8944 Part B	ASTM Method
Color	Clear	Clear	Visual
Viscosity,	250 cps	1,300 cps	D2392
Specific Gravity, gms./cc	1.185	1.038	D1475
Mix Ratio	100 to 100 By Weight		PTM&W
Pot Life, 4 fl.oz. Mass @ 77°F	9 minutes		D2471

HANDLING and CURING

PT8944 was developed to cure completely at room temperature and be used in situations where heat is not applied to provide initial curing of the material. PT8944 has a working time of 9 minutes, and demold time for castings with this system, in typical prototype part cross sections, is usually about 2 to 2.5 hours, depending upon shop temperatures. In a 73°F mold and shop temperature, PT8944 can expect to be demolded in 2.5 hours. In a 10 gram mass and .096 inch thickness, it will develop a hardness of 30D in 1 hour, 60D in 2 hours and 70D in 2.5 hours. In a 25 gram mass and .225 thickness it will develop a hardness of 50D in 1 hour, 67D in 2 hours and 72D in 2.5 hours. Castings will develop strength sufficient for most applications in 18 to 24 hours at 77°F, and ultimate properties are reached in 4 to 7 days at room temperature.

PT8944 cures to a natural white material if no heat is added. When cast in mass over .250 inch thick, or, if it is exposed to elevated temperature during initial cure, it will not turn white but will stay translucent. This translucent effect can be remedied by adding 0.25% PA0512 white pigment or other color of choice to the combined Parts A and B.

Oven post curing after room temperature curing can accelerate full cured properties, but some fixturing may be required. The time of an oven cure will depend upon the curing temperature; for example: 4 to 6 hours at 120°F, or 2 to 3 hours at 150°F. Precise minimum oven curing times should be determined in the field, as it is influenced by many variables, such as: part size and configuration, mold material and construction, casting method, heat source and type and others. Heat curing will induce a slight increase in the heat stability of the material.

TYPICAL MECHANICAL PROPERTIES

		PT8944 A/B	ASTM Method
Mix Ratio,	By Weight	100 : 100 By Weight	PTM&W
Color		White	Visual
Mixed Viscosity, centipoise		800 cps	D2393
Working Time, 4 fl. Oz. Mass, @77oF		9 minutes	D2471
Cured Hardness, Shore D		80-82 Shore D	D2240
Specific Gravity, grams, cc		1.107	D1475
Density,	lb./cu. Inch	0.0400	D792
	lb. / gallon	9.24	
Specific Volume, cu. in./lb.		25.01	
Tensile Strength, psi		8,303 psi	D638
Elongation at Break, %		27.2 %	
Tensile modulus, psi		311,973 psi	
Flexural Strength, psi		14,031 psi	D790
Flexural Modulus, psi		334,159 psi	
Compressive Strength, psi		11,340 psi	D695
Compressive Modulus, psi		366,099 psi	
Izod Impact Strength, ft.lbs./inch of Notch, Method A, Notched		1.318	D256
Glass Transition Temperature, DMA: T_g (Peak)		211°F	D7028
E' (Onset)		173°F	
Coefficient of Thermal Expansion, Range 50°C to 100°C		5.2498 x 10⁻⁶ in./in./ °F	D696

PACKAGING WEIGHTS

	Pail Kit	Drum Kit
PT8944 Part A	40 lb.	440 lb.
PT8944 Part B	40 lb.	440 lb.
Kit	80 lb.	880 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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