



PT7275 & PT7280 Midrange Hardness Flexible Urethane Elastomers

DESCRIPTION

The Shore A-75 and A-80 urethane systems described here are tough elastomeric materials in the middle range hardness for flexible urethanes that have good handling and cured properties. Their slightly tougher nature, compared to softer materials, makes them ideal for applications such as metal forming dies, high strength flexible molds, abrasion resistant shapes and parts, cutting pads, fixtures and flexible parts. Both systems are light colored materials that release air very well and pour easily.

PT7275 and PT7280 are very clear systems, and are low in color, so they can be tinted with either transparent or opaque dyes or pigments to give a variety of colored castings. These two systems can be considered very low hazard potential products, as they do not contain any toxic or regulated raw materials in their makeup. They do not contain methylene dianiline (MDA), or other potentially harmful aniline derivatives, nor do they contain MBOCA or TDI, and they do not contain any hazardous or potentially regulated diluents.

PRODUCT SPECIFICATIONS

	Shore A-75 System		Shore A-80 System		ASTM Method
	PT7275 A	PT7275 B	PT7280 A	PT7280 B	
Color	Lt. Amber	Amber	Lt. Amber	Amber	Visual
Viscosity, @ 77°F, centipoise	7000 cps	175 cps	2500 cps	200 cps	D2393
Specific Gravity, gms./cc	1.06	1.01	1.03	1.07	D1475
Mix Ratio, By Weight	100 : 30		100 : 80		PTM&W
Pot Life, 4 fl. Oz. Mass @ 77°F	30 minutes		25 - 30 minutes		D2471

HANDLING and CURING

Generally, with polyurethane elastomers, full properties are developed in 7 days at room temperature (75°F). Temperatures below 75°F will lengthen the cure time, and if the ambient temperature is below 60°F, additional heat may be necessary for proper cure. Elevated temperatures will accelerate the cure of urethanes, but care must be taken if a higher temperature is used to cure the material. Generally, the higher the curing temperature, the greater the final cured shrinkage. When heat curing for more rapid processing, to best control shrinkage, the casting should be allowed to set for 12 to 18 hours at room temperature before an oven post cure. A typical accelerated curing cycle, therefore, would be: Allow to gel on the pattern for 12 to 18 hours at room temperature (70°F to 80°F), then post cure for a minimum of 8 hours at 150°F to 165°F and allow to cool before demolding.

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TYPICAL MECHANICAL PROPERTIES

	PT7275 A / B	PT7280 A / B	ASTM Method
Mix Ratio, By Weight	100 : 30	100 : 80	PTM&W
Color	Amber	Amber	Visual
Mixed Viscosity, @ 77°F, centipoise	3000 cps	1550 cps	D2393
Working Time, 4 fl. Oz. Mass, @77°F	30 minutes	23 - 30 minutes	D2471
Cured Hardness, Shore A	75 A \pm 5	80 A \pm 5	D2240
Shrinkage, inch/inch, Mold Number 1, Volume: .053 Gallon	.0009 in. / in.	.0003 in. / in.	D2566
Specific Gravity, grams, cc	1.048	1.05	D1475
Density, lb./cu. Inch	.0379	.0378	D792
Specific Volume, cu. in./lb.	26.4	26.5	D792
Tensile Strength, psi	2250 psi	2785 psi	D638
Elongation at Break, %	755 %	800 %	
Tear Strength, Die C, pli	305 pli	352 pli	D624
Compression Set, Method B	76 %	80 %	D395
Bashore Rebound	45 %	39 %	D2632
Taber Abrasion, H18 Wheel, 1000 grams, 1000 cycles, mg loss	23 milligrams	33 milligrams	D1044

PACKAGING WEIGHTS

	Gallon Kit	Pail Kit
PT7275 A	8 lb.	40 lb.
PT7275 B	2.4 lb.	12 lb.
Kit	10.4 lb.	52 lb.
PT7280 A	8 lb.	40 lb.
PT7280 B	6.5 lb.	32 lb.
Kit	13.5 lb.	72 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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