



PT8964

High Temperature Material for High Strength Parts

DESCRIPTION

PT8964 is a two-component urethane casting system with very high temperature resistance that produces prototype and production parts with excellent cured properties. With an easy 2 to 1 mix ratio by weight or volume and very low mixed viscosity, PT8964 processes quickly and allows the casting of complicated configurations in a timely manner. Two hardeners are available for producing either natural amber or black parts.

PRODUCT SPECIFICATIONS

| | PT8964-A | PT8964-B | PT8964-B1 | ASTM Method |
|---------------------------------|------------------------------|-----------|-----------|-------------|
| Color | Clear | Black * | Amber | Visual |
| Viscosity, centipoise | 960 cps | 450 cps | 380 cps | D2392 |
| Specific Gravity, gms./cc | 1.13 | 1.16 | 1.16 | D1475 |
| Mix Ratio, By Wt. | 100 : 50 By Weight or Volume | | | PTM&W |
| Pot Life, 4 fl. Oz. Mass @ 77°F | — | 8 minutes | 6 minutes | D2471 |

* PT8964 Part B should be mixed before each use to redisperse the black pigment.

HANDLING and CURING

PT8964 is processed by mixing and degassing techniques typical in the industry. The low mixed viscosity of the components allows combining, mixing and deairing to be accomplished rather quickly, so there is ample time to fill the mold well within the pot life. PT8964 should be cast into a preheated mold (100-120°F) and allowed to cure for 60-90 minutes at 150°F before demolding. Various post-curing times and temperatures will result in different properties. At a minimum, we recommend 4 hours at 150°F as a post cure. During the oven post cure, take care to insure the part is positioned on a flat surface and is stable, to prevent distortion.

PACKAGING WEIGHTS

| | Gallon | Pail | Drum |
|---------------------|--------|--------|---------|
| PT8964 Part A | 8 lb. | 40 lb. | 440 lb. |
| PT8964 Part B or B1 | 4 lb. | 20 lb. | 220 lb. |
| Kit | 12 lb. | 60 lb. | 660 lb. |

TYPICAL MECHANICAL PROPERTIES

| | PT8964 A/B | PT8964 A/B1 | ASTM Method |
|---|------------------------------|----------------|-------------|
| Mix Ratio, By Weight | 100 : 50 By Weight or Volume | | PTM&W |
| Working Time, 4 fl. oz. mass, @ 77°F | 8 minutes | 6 minutes | D2471 |
| Color | Black * | Amber | Visual |
| Mixed Viscosity, @ 77°F, centipoise | 950 cps | 840 cps | D2393 |
| Cured Hardness, Shore D | 84 Shore D | 83 Shore D | D2240 |
| Specific Gravity, grams, cc | 1.14 | | D1475 |
| Density, lb./cu. Inch lb./gallon | 0.0412 9.5 | | D792 |
| Specific Volume, cu. in./lb. | 24.28 | | |
| Tensile Strength, psi | 9,920 psi | 9,565 psi | D638 |
| Elongation at Break, % | 49% | 56% | |
| Tensile modulus, psi | 252,760 psi | 241,650 psi | |
| Flexural Strength, psi | 12,029 psi | 11,100 psi | D790 |
| Flexural Modulus, psi | 296,501 psi | 256,151 psi | |
| Compressive Strength, psi | 11,984 psi | 13,006 psi | D695 |
| Compressive Modulus, psi | 274,254 psi | 263,050 psi | |
| Izod Impact Strength, ft.lbs/in of Notch, Method A, Notched | 1.52 | 1.72 | D256 |
| Glass Transition Temperature, Tg, DMA, E' - Tg Onset Tg Peak | 215°F 306°F | 210°F 298°F | D4065 |

* PT8964 Part B should be mixed before each use to redisperse the black pigment.

The above properties were obtained after curing test specimens 1 hour @ 70°C (158°F) plus 1 hour @ 100°C (212°F) plus 2 hours @ 110°C (230°F).

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, many urethane resins and hardeners can be irritating to the skin, and prolonged contact may result in sensitization; and 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, 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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