



REPLICAST 112 Versatile Fast-Setting Tooling System

DESCRIPTION

REPLICAST 112 is a low viscosity, fast setting polyurethane casting system that is useful for a variety of casting applications. Its low mixed viscosity makes it ideal for casting prototype or production parts where very fine detail must be duplicated. It is also well suited for potting and encapsulating uses, as well as, general tooling and fixtures. REPLICAST 112 offers the following benefits:

Non-Settling - Eliminates Lengthy Remixing of Hard Packed Fillers

Easy Mix Ratio for Fast Measuring

Very Low Shrinkage

Cured Material is Very Easy to Machine

Very Good Compressive Strengths - Tough Cured Properties

Fast Demold Time - Quick Reliable Tool Production

Safe, Non-Toxic Materials - For Safety in the Workplace

Filler PA0738 is a white, high purity alumina material in a fine powder form that is very easy to add to REPLICAST 112. The particle size and shape of PA0738 gives it a very free-flowing consistency, and also allows high loading of the REPLICAST 112, while maintaining a good pouring viscosity. The cured material is a medium tan color. Castings made with REPLICAST 112 and filler have very little shrinkage and are quite easy to machine.

HANDLING and CURING

REPLICAST 112 has the ability to tailor the mixture to suit the application. Lower levels of filler maintain a relatively low mixed viscosity for easy filling of thin section molds. Higher filler loading minimizes cured shrinkage in larger castings. By varying the amount of bulk filler used, a wide variety of different requirements can be met. REPLICAST 112 allows greater versatility and eliminates the time and effort of redispersing settled filler.

Recommended filler loading levels range from 88 Parts Resin : 100 Parts Hardener : 100 Parts Filler, up to 88 Parts Resin : 100 Parts Hardener : 300 Parts Filler, by weight. Ratios under 100 Parts Filler by weight may have excessive shrinkage if used to make very large castings. Ratios over 300 Parts Filler by weight will usually be too thick to pour easily. Experimentation using these guidelines is suggested to determine the best ratio for the particular job type. The working time of REPLICAST 112 was developed for the unfilled material. Therefore, when bulk fillers are used, the material is slowed down, allowing a longer working time to add the fillers and make the casting. This aids greatly in avoiding trapped air caused by trying to mix fillers into an exceptionally fast gelling system.

REPLICAST 112 Versatile Fast-Setting Tooling System, Page 2

TYPICAL MECHANICAL PROPERTIES

	REPLICAST 112 (No Filler Added)	REPLICAST 112 With Filler		ASTM Method
		Ratio 1	Ratio 2	
Mix Ratio, (Resin : Hardener : Filler) By Weight By Volume(*Approx.)	88 A : 100 B 1 to 1	88 : 100 : 200 1 to 1 to 2*	88 : 100 : 300 1 to 1 to 2.5*	PTM&W
Gel Time, @77°F	3 - 4 minutes	11 minutes	12 minutes	D2471
Cured Hardness, Shore D	75 Shore D	76 Shore D	77 Shore D	D2240
Shrinkage, inch/inch, Mold Number2, Volume: .344 gal.	.002 in./in.	.0003 in./in.	.0002 in./in.	D2566
Specific Gravity, grams, cc	1.07	1.48	1.51	D1475
Specific Volume, cu. in./lb.	25.8	18.2	17.6	D792
Tensile Strength, psi	4,900 psi	3,000 psi	2,900 psi	D638
Elongation at Break, %	30 %	.95 %	.63 %	
Flexural Strength, psi	6,000 psi	7,160 psi	7,610 psi	D790
Bashore Rebound	37 %	18 %	13 %	D2632

PACKAGING INFORMATION

REPLICAST 112			
	Gallon Kit	Pail Kit	
REPLICAST 112 Part A	8 lb.	40 lb.	
REPLICAST 112 Part B	9 lb.	45 lb.	
Kit	17 lb.	85 lb.	
PA0738 Filler - Bulk Packaging			
	5-Gallon Pail	Fiber Drum (Special Order)	
PA0738 Filler	50 lb.	225 lb.	
REPLICAST 112 Case Pack			
Special Cases of REPLICAST 112 with PA0738 filler included are available as a stock item. The case contains one gallon kit of REPLICAST 112, together with two gallons of filler at the appropriate weight to use at a 1 to 1 to 2 ratio.			
Case Contents	Package	Net Weight	Net Volume
REPLICAST 112	1 Gallon Kit REPLICAST 112	17 lb. Net Wt.	1.91 Gallons Volume
FILLER	2 Gallons PA0738 Filler	10.5 lb. Net Wt. each	1.88 Gallons Volume
CASE		38 lb. Net Weight	3.79 Gallons Volume (875.5 cu. in.)

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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