

VFI®-4172 75 D SLOW CASTING PLASTIC

VFI-4172 75 D Slow Casting Plastic is a hard, 100% solids, polyurethane plastic with a convenient 1:1 mix ratio by volume and high tensile strength. A longer pot life provides you with ample time to pour and process the material, which is great when pouring larger castings. The slow cure allows for pours at least ½" thick. This material is highly functional and easily machined with CNC or woodworking equipment. VFI-4172 is made to be poured and cured at room temperature for easier processing.

- Long pot life for more working time
- Capable of casting at a thickness of ½ an inch
- Produces durable and repeatable castings
- Neutral color that can easily be painted and primed after full cure
- Capable of being sanded and machined to a smooth and exact finish

PHYSICAL PROPERTIES	TEST METHOD	TEST RESULTS
Hardness Shore D	ASTM D 2240	75 D ± 2
Tensile Strength	ASTM D 638	5000 psi
Tensile Modulus	ASTM D 638	
Elongation	ASTM D 638	14%
Flexural Modulus	ASTM D 790	221,000 psi
Yield Stress	ASTM D 790	
Shrinkage Linear	12"x0.5"x0.5"	<0.005 in/in

LIQUID PROPERTIES	TEST METHOD	TEST RESULTS
Mixed Solids by Volume	ASTM D 2697	100%
Liquid Density A Side	ASTM D 2939	9.59 lbs/gal
Liquid Density B Side	ASTM D 2939	8.48 lbs/gal
Mixed Liquid Density	ASTM D 2939	9.00 lbs/gal
Specific Gravity A Side	N/A	1.15 g/mL
Specific Gravity B Side	N/A	1.02 g/mL
Mixed Specific Gravity	N/A	1.08 g/mL
Ratio by Volume (A:B)	N/A	88.40A:100B
Ratio by Weight (A:B)	N/A	1A:1B
Pot Life	N/A	15 minutes
Gel Time	N/A	18 minutes
Flash Point	ASTM D 56	>200 °F
VOC	N/A	0

MANUFACTURER OF HIGH PERFORMANCE POLYMERS

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THICKNESS REQUIREMENTS

We recommend pouring VFI-4172 at a minimum thickness of 1/2". Anything thinner than 1/2" will require post-curing at 150°F for a minimum of 2 hours.

STORAGE/SHELF LIFE

Material shelf life is 6 months for the Iso (A side) and 1 year for the Poly (B side) from the date of manufacture. Store in a clean, dry place between 60°F - 90°F.

MOLD PREPARATION

Release agents are recommended for any molding application to extend the life of the mold, and for prototyping urethane molds, it is a requirement. Heated molds are not recommended for this product or any mold over 120°F. Do not use a two-part closed mold.

MIXING

The B side (Poly) must be premixed once daily before each use, being careful not to introduce extra moisture or air. The A side (Iso) does not need to be mixed.

Prepare a container that is an appropriate size for degassing. It is recommended to contain at least 2/3 of headspace in order to vacuum degas. Pour measured A side into the container and promptly follow by pouring measured B side into the same container. Mix until uniform by hand or power mixer. Mixing, vacuum degassing, and pouring must all be completed before the end of the pot life.

POST-CURE

VFI-4172 does not require post-curing unless it is poured at less than 1/2". If pouring thinner than 1/2 of an inch, it must be post-cured at 150°F for a minimum of 2 hours. Regardless of thickness, it will reach full properties within 7 days of curing.

PRECAUTIONS

This product contains isocyanate, which may irritate the skin and is toxic if inhaled as particulate matter. VFI-4172 can be harmful if swallowed and cause eye irritation, allergies, or asthma symptoms. Seek medical attention if exposed or concerned. Avoid prolonged breathing of vapors or repeated skin contact. Wear PPE including gloves, eye, and face protection. Use only with adequate ventilation. Do not add foreign material to the product. See Safety Data Sheet for complete safety information.