VFI®-110 75 D INJECTABLE PLASTIC

VFI-110 75 D Injectable Plastic is a fast-setting, rigid urethane plastic with high strength and a quick demold time for increased part production. Its low viscosity allows it to be used in a reaction injection molding system with reduced air bubbles and waste. Depending on application needs, the plastic can produce a smooth glossy or matte finish. When primed, it is fully paintable, and it cures tough to be machined or sanded. VFI-110's high amine content provides good temperature stability and chemical resistance to make repeatable castings for a variety of applications, including industrial part-making and prototyping.

- Superior physical properties ideal for industrial part making and prototyping
- High amine content offers good temperature stability and chemical resistance
- Ultra-easy 1A:1B formulation helps to eliminate costly off-ratio mixes
- Room temperature cure without the need for post curing
- Fast setting for quicker demold times to increase part production rates
- Matching A and B viscosities allow for easy and consistent injection
- Fully cured castings are tough, durable, and easily paintable

PHYSICAL PROPERTIES	TEST METHOD	TEST RESULTS
Hardness Shore D	ASTM D2240	72
Tensile Strength	ASTM D638	4,000 psi
Elongation	ASTM D412	75%
Flexural Strength	ASTM D790	3,230 psi
Impact Reisitance Notched Izod	ASTM D4812	1.8 ft. lbs/in

LIQUID PROPERTIES	TEST METHOD	TEST RESULTS
Mixed Solids by Volume	ASTM D2697	100%
Mixed Liquid Density	ASTM D2939	9.41 lbs/gal
Specific Gravity A Side	N/A	1.16 g/mL
Specific Garvity B Side	N/A	1.09 g/mL
Specific Gravity Mixed	N/A	1.13 g/mL
Ratio by Volume (A:B)	N/A	1A:1B
Ratio by Weight (A:B)	N/A	100A:91.7B
Viscosity A Side	ASTM D2196	600 cps
Viscosity B Side	ASTM D2196	1,000 cps
Pot Life	N/A	40 seconds
Gel Time	N/A	80 seconds
Tack Free	N/A	110 seconds
Demold Time	N/A	5 minutes
Full Cure	N/A	7 days
Flash Point	ASTM D56	A=370 °F / B=240 °F
Boiling Point (A/B)	N/A	A=400 °F / B=530 °F
VOC	N/A	0%

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THICKNESS REQUIREMENTS

VFI-110 does not have a thickness limit, but if the part you are injecting exceeds 5 pounds, a different material that has a longer working time should be used.

STORAGE/SHELF LIFE

Store between 60°F - 90°F in a clean, dry building. The shelf life of unopened containers is 12 months after the date of manufacture. Once open, use immediately, but if storing after opening, both sides must be nitrogen purged.

MOLD PREPARATION

The mold must be clean and free of oils, dirt, or debris. All surfaces in contact with VFI-110 must be properly sealed and coated with a release agent to prevent unwanted adhesion. Applying a release agent will also help prolong the life of the mold. Heating the mold between 70°F-150°F before injecting can accelerate the curing process. Compatible molds include urethane, metal, and platinum silicone when properly prepared.

MIXING

Before combining the A side (ISO) and B side (Poly) material, premix the B side material. A proportioner is required to inject the material into a mold. As a fast-setting material, VFI-110 does not need to be vacuum degassed. The primary application method is to inject the material.

POST-CURE

The casting can be demolded after 5 minutes if greater than 125 mils thick or 10 minutes if less than 125 mils. The material should be allowed to cure at room temperature for 16 hours. It does not require post-curing to achieve full properties. Full physical properties can be achieved in 7 days.

PRECAUTIONS

This product contains isocyanate, which may irritate the skin and is toxic if inhaled as particulate matter. Avoid prolonged breathing of vapors or repeated skin contact. Use only with adequate ventilation. Do not thin or add foreign material to the product. See Safety Data Sheet for complete safety instructions.

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