

VFI®-4478 85 D PROTOTYPING POLYURETHANE PLASTIC

VFI-4478 85 D Prototyping Polyurethane Plastic is a premium urethane plastic for use in a reaction injection molding system. It is capable of being backfilled with a urethane foam to create a light and durable part. VFI-4478 is used to make high-end, fire-retardant plastic housings and parts for a variety of industries, including medical, automotive, and aerospace.

- Works in reaction injection molding applications
- Able to be post-processed with a CNC or general milling machine
- Will flash to white and is fully paintable
- Capable of passing the UL 94-V0 test
- Convenient 1:1 mix ratio by weight

PHYSICAL PROPERTIES	TEST METHOD	TEST RESULTS
Hardness Shore D	ASTM D2240	85 ± 2
Tensile Strength	ASTM D638	10,000 psi
Elongation	ASTM D412	22%
Flexural Strength	ASTM D790	15,600
Impact Resistance Unnotched Izod	ASTM D4812	6.4 ft. lbs/in
Shrinkage	N/A	<0.01 in/in

LIQUID PROPERTIES	TEST METHOD	TEST RESULTS
Mixed Solids by Volume	ASTM D2697	100%
Liquid Density A Side	ASTM D2939	10.28
Liquid Density B Side	ASTM D2939	11.33
Mixed Liquid Density	ASTM D2939	10.78
Specific Gravity A Side	N/A	1.23
Specific Gravity B Side	N/A	1.36
Specific Gravity Mixed	N/A	1.29
Ratio by Volume (A:B)	N/A	100A:91B
Ratio by Weight (A:B)	N/A	100A:100B
Viscosity A Side	ASTM D2196	400 cps
Viscosity B Side	ASTM D2196	5340 cps
Mixed Viscosity	N/A	1200 cps
Pot Life	N/A	15 min
Gel Time	N/A	18 min
Demold Time	N/A	2-4 hours
Place into Service	N/A	18 hours
Full Cure	N/A	7 days
Flash Point	ASTM D56	>200°F
VOC	N/A	0%

MANUFACTURER OF HIGH PERFORMANCE POLYMERS

Toll-Free 800-307-9218 | volatilefree.com | info@volatilefree.com

This information and technical advice provided herein are believed to be reliable and accurate to the best knowledge of Volatile Free, Inc., as based on tests and should serve only as a recommendation. As the manufacturer, Volatile Free, Inc. makes no representations or warranties of any kind, expressed, implied or statutory, including but not limited to all implied warranties of merchantability or fitness for use or a particular purpose, or any other matter with respect to this product. Volatile Free, Inc. makes no representations or warranties as to the results of the use of the product and assumes no obligation or liability in connection therewith. Volatile Free, Inc. is not liable for any special, exemplary, punitive, incidental or consequential damages of any sort or kind from use of this product. The information provided herein is subject to change at any time without notice. Information changes may include, but are not limited to, commercial and technical changes, changes in pricing, physical characteristics and packaging.

VFI®-4478 85 D PROTOTYPING POLYURETHANE PLASTIC

THICKNESS REQUIREMENTS

To fully cure the part, it cannot be poured or RIM processed less than a quarter inch thick at room temperature. For thinner pours, you must elevate the mold and molding temperature to 115°F.

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 opened, use immediately. If storing after opening, both sides must be nitrogen purged immediately after use.

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 115°F.

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

After an initial cure of 16 hours at room temperature, heat curing at 150°F for 24 hours will achieve full physical properties. Physical properties at room temperature will be delayed until after 7 days and may not fully develop without post-curing in an oven.

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 add foreign material to the product. See Safety Data Sheet for complete safety data.