



Product Name

TP-4002 Polyurethane



Description

TP-4002 is a tough, impact resistant polyurea formulated for vacuum assisted casting systems and short mold cycle times. Excellent physical properties can be obtained without the utilization of mercury, MOCA, or TDI. TP-4002 is designed to simulate Thermoplastic Olefin (TPO) materials for producing large parts with exceptional Notched Izod impact strength.

Physical Properties

Mix Ratio	Resin:Hardener (parts by weight)		100:50	
Mix Ratio	Resin:Hardener (parts by volume)		100:50	
Viscosity (cps@100°F)	Resin	7900	Gel Time	2.5 ± .5 Minutes
	Hardener	70	Demold Time*	1.5 ± .5 Hours
	Mixed	2100	Color	Black
Specific Gravity (g/cc)	Resin	1.17	* Demold time is always mass dependant.	
	Hardener	1.17		

Cure 1 ► 24 hours at 77°F
Cure 2 ► 7 days at 77°F

Cured Properties

	Method	Cure 1	Cure 2
Hardness (shore D)	ASTM D-2240	70 ± 5	70 ± 5
Tensile Strength (psi)	ASTM D-638	3,300	3,400
Elongation at Break	ASTM D-638	120%	100%
Compression Strength (psi)	ASTM D-695	N/A	N/A
Compression Modulus (psi)	ASTM D-695	N/A	N/A
Ultimate Flex Strength (psi)	ASTM D-790	2,500	3,500
Flexural Modulus (psi)	ASTM D-790	65,000	100,000
Notched Izod (ft.lbs./in.)	ASTM D-256	10.0	6.0
Linear Shrink (in./in.)	ASTM D-2566	N/A	0.002
Heat Deflection Temp. (66psi)	ASTM D-648	68°C / 154°F	70°C / 158°F
Heat Deflection Temp. (264psi)	ASTM D-648	N/A	N/A
Specific Gravity (g/cc)		1.14	1.14

Processing Notes

TP-4002 is designed to work in vacuum assisted casting applications. The hardener component will separate during shipping/storage.

Agitate the hardener and resin before use to ensure that the formula is homogeneous.

Safety and Handling

DO NOT USE UNTIL MSDS HAVE BEEN READ AND UNDERSTOOD. Store containers in a dry location. Partially used containers should be blanketed with dry nitrogen to prevent moisture contamination. Moisture will react with the resin component, creating carbon dioxide gas and a possible pressure increase in the container. SPECIFICATION WRITERS: The above values are meant to represent typical properties only. Users are encouraged to qualify products in their own laboratories prior to specification publication.

PURCHASER has the responsibility for determining any applicability of and compliance with federal, state, and local laws concerning labeling, use, and waste disposal, particularly in making consumer items. Innovative Polymers, Inc. makes no warranty, expressed or implied, for merchantability or fitness of use. The sole liability of Innovative Polymers, Inc. for any claim arising out of the manufacture, use, or sale of its products shall be the buyers purchase price.