

**Product Name**

TP-4007 Polyurethane



High Impact + High Heat Resistant

Description

TP-4007 is a tough, impact resistant polyurea formulated for room temperature hand-batch systems or vacuum-assisted casting methods. Excellent physical properties can be obtained without the utilization of mercury, MOCA, or TDI.

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	1000	Gel Time
	Hardener	600	Demold Time*
	Mixed	400	Color
			10 ± 2 Minutes
			1 Hour at 150 °F
			Translucent Amber
Specific Gravity (g/cc)	Resin	1.20	* Demold time is always mass dependant.
	Hardener	1.20	

Cure 1 ► 1 hour at 150 °F + 24 hours at 77 °F
 Cure 2 ► 1 hour at 150 °F + 7 days at 77 °F

Cured Properties

	Method	Cure 1	Cure 2
Hardness (shore D)	ASTM D-2240	80 ± 5	80 ± 5
Tensile Strength (psi)	ASTM D-638	9,000	10,500
Elongation at Break	ASTM D-638	19%	10%
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	13,500	15,000
Flexural Modulus (psi)	ASTM D-790	285,000	325,000
Notched Izod (ft.lbs./in.)	ASTM D-256	1.2	1.2
Linear Shrink (in./in.)	ASTM D-2566	0.002-0.005	0.002-0.005
Heat Deflection Temp. (66psi)	ASTM D-648	N/A	N/A
Heat Deflection Temp. (264psi)	ASTM D-648	171°C / 340°F	174°C / 346°F
Specific Gravity (g/cc)		1.20	1.21

Processing Notes

Formulated for hand-batch equipment. For best results, de-air the material prior to casting, then pressurize to 60 psi until cured. The hardener component will darken as it ages. It is recommended that dry nitrogen be used to protect the material from oxidizing and being moisture contaminated.

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.
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