

InnoTuf® TP-4004

Polyurethane Thermoset Elastomer

Innovative Polymers, Inc.

Message:

TP-4004 is an impact resistant polyurethane formulated for room temperature hand-batch or vacuum assisted casting methods. Excellent physical properties can be obtained without the utilization of mercuiy, MOCA, or TDI.

General Information			
Features	High Heat Resistance		
	High Impact Resistance		
RoHS Compliance	RoHS Compliant		
Appearance	Amber		
Processing Method	Vacuum Casting		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
Base Resin	1.16	g/cm³	
Cured	1.17	g/cm³	
Hardener	1.20	g/cm³	
Molding Shrinkage - Flow	0.10 to 0.50	%	ASTM D2566
Mechanical	Nominal Value	Unit	Test Method
Flexural Modulus	586	MPa	ASTM D790
Flexural Strength	27.6	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	370	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	100	°C	
1.8 MPa, Unannealed	83.0	°C	
Thermoset	Nominal Value	Unit	Test Method
Thermoset Components			
	Mix Ratio by Volume: 48		
Hardener	Mix Ratio by Weight: 50		
	Mix Ratio by Weight: 100		
Resin	Mix Ratio by Volume: 100		
Demold Time (66°C)	60	min	

Uncured Properties	Nominal Value	Unit	Test Method
Viscosity			
38°C ¹	0.10	Pa·s	
38°C ²	2.1	Pa·s	
38°C ³	5.1	Pa·s	
Curing Time ⁴	25	hr	
Gel Time	10 to 14	min	
Cured Properties	Nominal Value	Unit	Test Method
Shore Hardness (Shore D)	60 to 70		ASTM D2240
Tensile Strength	27.6	MPa	ASTM D638
Tensile Elongation at Break	70	%	ASTM D638
NOTE			
1.	Hardener		
2.	Mixed		
3.	Resin		
4.	1 hour at 150°F + 24 hours at 77°F		

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