

InnoTuf® TP-4015

Polyurethane Thermoset Elastomer

Innovative Polymers, Inc.

Message:

TP-4015 is an 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.

General Information			
Features	Fast Molding Cycle		
	Flame Retardant		
	Good Impact Resistance		
	High Heat Resistance		
RoHS Compliance	RoHS Compliant		
Appearance	Black		
Processing Method	Vacuum Casting		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
Cured	1.22	g/cm ³	
Hardener	1.22	g/cm ³	
Base Resin	1.22	g/cm ³	
Molding Shrinkage - Flow	0.10 to 0.50	%	ASTM D2566
Mechanical	Nominal Value	Unit	Test Method
Flexural Modulus	1080	MPa	ASTM D790
Flexural Strength	51.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	110	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	116	°C	
1.8 MPa, Unannealed	95.0	°C	
Thermoset	Nominal Value	Unit	Test Method
Thermoset Components			
Mix Ratio by Volume: 50			
Hardener	Mix Ratio by Weight: 50		

Mix Ratio by Weight: 100

Resin	Mix Ratio by Volume: 100		
Demold Time	30 to 50	min	
Uncured Properties	Nominal Value	Unit	Test Method
Viscosity			
38°C ¹	0.20	Pa·s	
38°C ²	0.35	Pa·s	
38°C ³	0.70	Pa·s	
Curing Time ⁴	88	hr	
Gel Time	1.4 to 1.6	min	
Cured Properties	Nominal Value	Unit	Test Method
Shore Hardness (Shore D)	65 to 75		ASTM D2240
Tensile Modulus	927	MPa	
Tensile Strength	42.7	MPa	ASTM D638
Tensile Elongation at Break	11	%	ASTM D638
NOTE			
1.	Hardener		
2.	Mixed		
3.	Resin		
4.	16 hours at 150°F + 3 days at 77°F		

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