

InnoTuf® TP-4014

Polyurethane Thermoset Elastomer

Innovative Polymers, Inc.

Message:

TP-4014 is an impact resistant polyurea formulated for vacuum assisted or meter-mix dispensing methods. Excellent physical properties can be obtained without the utilization of mercuiy, MOCA, or TDI. TP-4014 is a U.L 94vO registered flame retardant polyurethane. It also meets the standards to pass FAR 25.853.

General Information			
Features	Flame Retardant		
	Good Impact Resistance		
Agency Ratings	FAR 25.853		
RoHS Compliance	RoHS Compliant		
Appearance	Amber		
Processing Method	Vacuum Casting		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
Cured	1.23	g/cm³	
Base Resin	1.23	g/cm³	
Hardener	1.27	g/cm³	
Molding Shrinkage - Flow	0.10 to 0.50	%	ASTM D2566
Mechanical	Nominal Value	Unit	Test Method
Flexural Modulus	1030	MPa	ASTM D790
Flexural Strength	44.1	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	160	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	110	°C	
1.8 MPa, Unannealed	89.0	°C	
Flammability	Nominal Value		Test Method
Flame Rating	V-0		UL 94
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	0.20	Pa·s	
38°C ²	0.70	Pa·s	
38°C ³	1.1	Pa·s	
Curing Time ⁴	25	hr	
Gel Time	10 to 15	min	
Cured Properties	Nominal Value	Unit	Test Method
Shore Hardness (Shore D)	65 to 75		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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