

TSE Industries Millathane® 5004 Millable Polyurethane Elastomer with 20 PHR HAF Black (Typical)

Category : Polymer , Thermoset , Polyester, TS , Polyurethane, TS , Thermoset Polyurethane, Elastomer, Unreinforced , Rubber or Thermoset Elastomer (TSE)

Material Notes:

MILLATHANE 5004 is a millable polyurethane elastomer having excellent processing characteristics. MILLATHANE 5004 stocks can be readily processed on conventional rubber equipment. Vulcanization is carried out by the use of various peroxides including dicumyl peroxide (DCP) or 2,5-dimethyl-2,5-bis (t-butylperoxy) hexane (DBPH). All information provided by TSE Industries

Order this product through the following link:

http://www.lookpolymers.com/polymer_TSE-Industries-Millathane-5004-Millable-Polyurethane-Elastomer-with-20-PHR-HAF-Black-Typical.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.28 g/cc	1.28 g/cc	
Mooney Viscosity	70 @Temperature 100 °C	70 @Temperature 212 °F	ML 1+4

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	62	62	aged 70 hours at 250°F
	62	62	aged 70 hours at 300°F
	66	66	
	66	66	aged 70 hours at 250°F in ASTM Oil #903
	66	66	aged 96 hours at 158°F
	66	66	
	67	67	
	67	67	aged 70 hours at 250°F in ASTM Oil #901
Tensile Strength, Yield	16.5 MPa	2400 psi	
	21.0 MPa	3050 psi	aged 70 hours at 300°F
	22.8 MPa	3300 psi	aged 70 hours at 250°F in ASTM Oil #901
	23.4 MPa	3400 psi	aged 70 hours at 250°F in ASTM Oil #903
	25.9 MPa	3750 psi	

Mechanical Properties	27.2 MPa Metric	3950 psi English	aged 70 hours at 250°F Comments
	29.0 MPa	4200 psi	
	29.3 MPa	4250 psi	aged 96 hours at 158°F
Elongation at Yield	300 %	300 %	
	370 %	370 %	
	400 %	400 %	
	410 %	410 %	aged 70 hours at 250°F in ASTM Oil #903
	420 %	420 %	aged 70 hours at 250°F
	420 %	420 %	aged 70 hours at 250°F in ASTM Oil #901
	470 %	470 %	aged 96 hours at 158°F
	490 %	490 %	aged 70 hours at 300°F
100% Modulus	0.00352 GPa	0.510 ksi	
200% Modulus	0.00979 GPa	1.42 ksi	
300% Modulus	0.0121 GPa	1.75 ksi	aged 70 hours at 300°F
	0.0156 GPa	2.26 ksi	aged 70 hours at 250°F in ASTM Oil #901
	0.0157 GPa	2.28 ksi	aged 70 hours at 250°F in ASTM Oil #903
	0.0165 GPa	2.40 ksi	
	0.0179 GPa	2.60 ksi	aged 70 hours at 250°F
	0.0185 GPa	2.68 ksi	aged 96 hours at 158°F
	0.0186 GPa	2.70 ksi	
	0.0190 GPa	2.75 ksi	
Tear Strength	550 kN/m	3140 pli	ASTM Die C
Compression Set	20 % @Temperature 70.0 °C, Time 79200 sec	20 % @Temperature 158 °F, Time 22.0 hour	Method B
Thermal Properties	Metric	English	Comments
Minimum Service Temperature, Air	-33.4 °C	-28.1 °F	Retraction Temperature, TR10; ASTM D1329

Thermal Properties	Metric	English	Comments
	-11.0 °C	12.2 °F	Retraction Temperature, TR10; ASTM D1329
	-3.40 °C	25.9 °F	Retraction Temperature, TR10; ASTM D1329
Brittleness Temperature	-59.0 °C	-74.2 °F	Bell

Descriptive Properties	Value	Comments
Bashore Resilience (%)	47	
Gehman Modulus (°C)	-25.5	T2
	-33.1	T5
	-35	T10
	-39.5	T100
Mooney Scorch	25	t5, minutes; MS @ 121°C
Volume Change (%)	-0.67	aged 70 hours at 250°F in ASTM Oil #901
	-1.03	aged 70 hours at 250°F in ASTM Oil #903
	1.3	aged 7 days at Room Temp in ASTM Fuel A
	16	aged 7 days at Room Temp in ASTM Fuel B

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