# TyrFil® R-2

## Polyurethane (MDI)

### Pathway Polymers

#### Message:

TyrFil® R-2 is a two-component system consisting of Catalyst blend (side A) and Prepolymer (side B). It is designed to be used as a binder for ground rubber for filling tires. Total amount of filler is up to 35% by weight in cured material.

UsesTire RepairAppearanceBrownFormsLiquidHardnessUiquidUrometer HardnessSe - 40Shaw A <sup>1</sup> 36 - 40Shaw A <sup>1</sup> 23 - 27ElastomersNominal ValueUnitInternational Second S	General Information			
ArmsLiquidFormsLiquidTest MethodDurometer Hardness36 - 40Test MethodDurometer Hardness23 - 27ASTM D2240Shaw A23 - 27ElastomersNominal ValueUnitElastomersNominal ValueUnitCommeter ValueTensile Strength (Break)1.20MPaCommeter ValueTensile Elongation (Break)0.30MPaCommeter ValueTer Strength	Uses	Tire Repair		
HardnessTest MethodDurometer Hardness36 - 40ASTM D2240Shaw A 136 - 40Marce MethodShaw A 123 - 27ASTM D2240ElastomersNominal ValueUnitTensile Strength (Break)1.20MPaTensile Elongation (Break)300%Tear Strength6.80Kl/mCracking0.70Kl/mBayshore Resillence30 - 45%Thermoset30 - 45%Thermoset Mik Viscosity250 - 300cP25°C 3250 - 300cPGel Time (Stric)250 - 300cPGel Time (Stric)0.0 - 2.5.0minGel Time (Stric)0.0 - 2.5.0minGel Time (Stric)1.0dyJang Alagation1.1r- 5100:101	Appearance	Brown		
Durmeter Hardness         AstM 240           Shaw A <sup>1</sup> 36-40         AstM D2240           Shaw A         23-27         AstM D2240           Elastomers         Nominal Value         Unit           Tensile Strength (Break)         120         MPa           Tensile Elongation (Break)         300         %           Tear Strength         680         MV/m           Cracking         070         KV/m           Baybore Resilience         30-45         %           Thermoset         Vini         Second           Shef Kaff         50-300         KV/m           Shef Kaff         250-300         vini           Shef Kaff         250-300         cancend (Condert)           Ster Ca         0.0-25.0         oni           Ster Ca         0.0-25.0         oni           Care Time (2s*C)         0.0-25.0         oni           Care Time (2s*C)         0.0-101         cancend (Condert)	Forms	Liquid		
Shaw A 136 - 40ASTM D2240Shaw A23 - 27Annol ValueUnitElatomersNominal ValueUnitTensile Strength (Brask)1.20MPaTensile Strength (Brask)30.0%Tensile Elongation (Bresk)8.00M/VmCacking0.70K/VmBayshore Resilience30 - 45%TermosetNominal ValueUnitThermoset Mix Viscosity250 - 300cP2 Src <sup>3</sup> 250 - 300cPGel Time200 - 25.0minGuring Latomet1.0agyMining Ratio	Hardness	Nominal Value		Test Method
Shaw A23 - 27ElastomersNominal ValueUnitTensile Strength (Break)1.20MPaTensile Elongation (Break)300%Tensile Elongation (Break)6.80KN/mTerrostrength6.70KN/mBayshore Resilience30 - 45%TermosetNominal ValueUnitThermoset Mix Viscosity52 of 300cP2shc <sup>3</sup> 250 - 300cP2shc <sup>4</sup> 250 - 300cPGel Time20.0 - 25.0minCure Time (25°C)1.0day1.1-s1.1Processing Temperature 721.27°CFit LanalysiaNominal ValueUnitMult Density25°C <sup>8</sup> 1.08Ser <sup>6</sup> 1.08gernal	Durometer Hardness			
ElastomersNominal ValueUnitTensile Strength (Break)1.20MPaTensile Elongation (Break)300%Tear Strength	Shaw A <sup>1</sup>	36 - 40		ASTM D2240
Tensile Strength (Break)1.20MPaTensile Elongation (Break)300%Tear Strength	Shaw A	23 - 27		
Tensile Elongation (Break)300%Tear Strength- 26.80kN/mCracking0.70kN/mBayshore Resilience30 - 45%ThermosetNominal ValueUnitShelf Life52wkThermoset Mix Viscosity250 - 300cP25° C <sup>3</sup> 250 - 300cPGel Time20.0 - 25.0minCure Time (25°C)1.0day1.0101 5100:101 61:1-Processing Temperature <sup>7</sup> 21 - 27°CRIL AnalysisNominal ValueUnitMett Density25° C <sup>8</sup> 1.08g/cm³	Elastomers	Nominal Value	Unit	
Tear Strength          2         6.80         kN/m           Cracking         0.70         kN/m           Bayshore Resilience         30 - 45         %           Thermoset         Nominal Value         Unit           Shelf Life         52         wk           Thermoset Mix Viscosity	Tensile Strength (Break)	1.20	MPa	
- 26.80kN/mCracking0.70kN/mBayhore Resilience30-45%Bayhore Resilience30-45%ThermosetNominal ValueUnitShelf Life52wkThermoset Mix Viscosity25°C 3250-30025°C 3250-300cPGel Time200-25.0minCure Time (25°C)1.0day1.1- 5100:101 61.1-Processing Temperature 721-27°CIt AnalysisNominal ValueUnitMelt Density25°C 81.08g/cm 325°C 91.05g/cm 3	Tensile Elongation (Break)	300	%	
Cracking         0.70         N/m           Bayhore Resilience         30 - 45         %           Thermoset         Nominal Value         Unit           Shelf Life         52         wk           Thermoset Mix Viscosity         25°C <sup>3</sup> 250 - 300         cP           25°C <sup>3</sup> 250 - 350         cP         1000000000000000000000000000000000000	Tear Strength			
Bayshore Resilience30 - 45%Bayshore Resilience30 - 45%ThermosetVominal ValueUnitShelf Life52wkThermoset Mix Viscosity250 - 300cP25°C <sup>3</sup> 250 - 350cPGel Time20.0 - 25.0minCure Time (25°C)1.0dayMixing Ratio <sup>5</sup> 100:101 <sup>6</sup> 1.1 9Processing Temperature <sup>7</sup> 21 - 27°CFILl AnalysisNominal ValueUnitMet Density25°C <sup>8</sup> 1.0825°C <sup>9</sup> 1.05g/cm³	2	6.80	kN/m	
Thermoset         Nominal Value         Unit           Shelf Life         52         wk           Thermoset Mix Viscosity          wk           25°C <sup>3</sup> 250 - 300         cP           25°C <sup>4</sup> 250 - 350         cP           Gel Time         200 - 25.0         min           Cure Time (25°C)         1.0         day           Mixing Ratio        5         100:101          6 <sup>6</sup> 1:1        6           Fill Analysis         Nominal Value         Unit           Melt Density         25°C <sup>8</sup> 1.08           25°C <sup>9</sup> 1.05         g/cm <sup>3</sup>	Cracking	0.70	kN/m	
Shelf Life         52         wk           Thermoset Mix Viscosity         Thermoset Mix Viscosity         25°C <sup>3</sup> 250 - 300         cP           25°C <sup>4</sup> 250 - 350         cP         25°C <sup>4</sup> 20.0 - 25.0         min           Cure Time (25°C)         1.0         day         2000	Bayshore Resilience	30 - 45	%	
Thermoset Mix Viscosity         25°C <sup>3</sup> 250 - 300       CP         25°C <sup>4</sup> 250 - 350       CP         Gel Time       200 - 25.0       min         Cure Time (25°C)       1.0       day         Mixing Ratio <sup>5</sup> 100:101 <sup>6</sup> 100:101 <sup>6</sup> <sup>6</sup> 1:1 <sup>6</sup> Fil Analysia       Nominal Value       Unit         Met Density <sup>5</sup> 1.08         25°C <sup>8</sup> 1.05       g/cm <sup>3</sup>	Thermoset	Nominal Value	Unit	
25°C <sup>3</sup> 250 - 300         CP           25°C <sup>4</sup> 250 - 350         cP           Gel Time         20.0 - 25.0         min           Cure Time (25°C)         1.0         day           Mixing Ratio <sup>5</sup> 100:101 <sup>6</sup> 1:1            Processing Temperature <sup>7</sup> 21 - 27         °C           FII Analysis         Nominal Value         Unit           Mett Density          1.08         g/cm <sup>3</sup>	Shelf Life	52	wk	
$25^{\circ}$ C <sup>4</sup> $250 - 350$ $cP$ Gel Time $200 - 25.0$ min         Cure Time (25°C) $1.0$ day         Mixing Ratio $-^{5}$ $100.101$ $-^{6}$ $100.101$ $-^{6}$ $-^{6}$ $11.1$ $-^{6}$ Processing Temperature <sup>7</sup> $21 - 27$ $^{\circ}$ C         Fil Analysis       Nominal Value       Unit         Melt Density $25^{\circ}$ C $^{8}$ $1.08$ $g/cm^{3}$	Thermoset Mix Viscosity			
Gel Time20.0 - 25.0minCure Time (25°C)1.0dayMixing Ratio $-^5$ 100:101 $-^6$ 100:101 $-^6$ $-^6$ 1:1 $-^6$ Processing Temperature 721 - 27°CFill AnalysisNominal ValueUnitMet Density $-25°C^8$ 1.0825°C 91.05g/cm³	25°C <sup>3</sup>	250 - 300	сР	
$\Box$ I.0dayMixing Ratio $I$ $I$ $-^5$ 100:101 $I$ $-^6$ 1:1 $I$ Processing Temperature 721 - 27 $C$ Fil AnalysisNominal ValueUnit $I = 2^5 C^8$ 1.08g/cm³ $25^\circ C^9$ 1.05g/cm³	25°C <sup>4</sup>	250 - 350	сР	
Mixing Ratio 5100:101 61:1Processing Temperature 721 - 27CCFill AnalysisNominal ValueMelt Density25°C 81.0825°C 91.05g/cm³	Gel Time	20.0 - 25.0	min	
$5^{5}$ 100:101 $6^{-}$ 1:1 $Processing Temperature^{7}$ 21 - 27       °C         Fill Analysis       Nominal Value       Unit         Melt Density       25°C $^{8}$ 1.08       g/cm³         25°C $^{9}$ 1.05       g/cm³	Cure Time (25°C)	1.0	day	
61:1Processing Temperature 721 - 27°CFill AnalysisNominal ValueUnitMelt Density25°C 81.08g/cm³25°C 91.05g/cm³				
Processing Temperature 721 - 27°CFill AnalysisNominal ValueUnitMelt Density25°C 81.08g/cm³25°C 91.05g/cm³	5	100:101		
Fill AnalysisNominal ValueUnitMelt Density25°C 81.08g/cm³25°C 91.05g/cm³	6	1:1		
Melt Density         25°C <sup>8</sup> 1.08         g/cm <sup>3</sup> 25°C <sup>9</sup> 1.05         g/cm <sup>3</sup>	Processing Temperature <sup>7</sup>	21 - 27	°C	
25°C <sup>8</sup> 1.08     g/cm <sup>3</sup> 25°C <sup>9</sup> 1.05     g/cm <sup>3</sup>	Fill Analysis	Nominal Value	Unit	
25°C <sup>9</sup> 1.05 g/cm <sup>3</sup>	Melt Density			
-	25℃ <sup>8</sup>	1.08	g/cm³	
Additional Information Nominal Value Unit	25℃ <sup>9</sup>	1.05	g/cm³	
	Additional Information	Nominal Value	Unit	

Special Instructions: Filler can be added direct into mixing head of pouring machine or to each side prior to use. Do not store side B (Prepolymer) with filler longer than 4 to 6 hours.

NOTE

1.	Filled material, 30% ground rubber
2.	C mould
3.	Prepolymer (side B)
4.	Catalyst (side A)
5.	by weight (±5%)
6.	by volume (±5%)
	for both Catalyst (side A) &
7.	Prepolymer (side B)
8.	Prepolymer (side B)
9.	Catalyst (side A)

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#### Recommended distributors for this material

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