



Technical Data Sheet: Neuthane 500 Series

Aliphatic - PTMEG Ether Prepolymers

v1 06 November 2018

www.notedome.com



Neuthane 500 Series Aliphatic - PTMEG Ether Prepolymer (94 Shore A - 70 Shore D)

Properties			Processing			Special Considerations		
<p>The Neuthane 500 series are high performance Aliphatic Isocyanate prepolymers designed to produce items for use in extreme application areas.</p> <p>It offers:</p> <ul style="list-style-type: none"> • a very high level of physical properties • exceptional dynamic performance • the highest level of hydrolysis resistance • ease of use • low viscosity • water clarity and UV stability* • wide hardness range <p>* depending upon curative used</p> <p>Typical Applications:</p> <ul style="list-style-type: none"> • High load roll coverings (e.g. steel industry) • Roller coverings for use in hot/wet environments (e.g. pre treatment and squeegee rolls in the steel industry) • High temperature applications • Paper mill rollers 			<p>Processing can be by hand or by dispensing machine.</p> <p>Hand Processing:</p> <ul style="list-style-type: none"> • Melt prepolymer at 50-70°C for 12-24 hours (as a guide the grades with the lower NCO value will take longer to melt than those with very high level NCO values) • Heat the prepolymer and curative to the recommended temperature • Add pigments and Antifoam, as applicable, whilst mixing • It is recommended that air be removed from the prepolymer under vacuum prior to addition of the curative • Add the curative and thoroughly mix ensuring that no unmixed material is left on the container sides (if necessary the mix can be transferred to a second clean container and mixed again) • Remove air under vacuum • Cast into moulds, preheated to the recommended temperature • Cure as recommended 			<p>Processing</p> <ul style="list-style-type: none"> • Avoid prolonged storage of prepolymers at elevated temperatures. This will result in low hardness and lower properties of the cured material • Avoid moisture contamination of all materials • Ensure thorough mixing of curatives prior to use • Remove air, under vacuum, from the prepolymer components prior to use • Part used containers should be flushed with dry nitrogen and resealed immediately after use <p>Alternatives</p> <ul style="list-style-type: none"> • Solvents – ester based systems should be considered Neuthane 200 [TDI] or Neuthane 700 [MDI] • Cost – Aromatic Isocyanate / PTMEG based systems should be considered: Neuthane 100 [TDI] or Neuthane 600 [MDI] 		

COST

PROCESSING

ABRASION

DYNAMIC

RESILIENCE

SOLVENT

HUMID/WET

TEMPERATURE

UV STABILITY

Key

Excellent / Good

Good / Average

Average / Poor

Neuthane 500 Series Aliphatic - PTMEG Ether Prepolymer (94 Shore A - 70 Shore D)

Neuthane			555	560	575	595
%NCO (mid-point)	%		5.5	6.0	7.5	9.5
Curative			CA1	CA1	CA1	CA1
Curative # 2		MOCA – Can be used to achieve the same hardness with a pot life > 60 minutes. Typical properties will be reduced by 25%				
Mix Ratio Curative CA1 per 100 Parts Resin	by weight		10.8	11.8	14.7	18.7
Resin Temperature	°C		70	70	70	70
Curative Temperature	°C		30	30	30	30
Recommended Mould Temperature	°C		90	90	90	90
Viscosity @ 100°C (prepolymer)	cps		1200	1100	420	380
Pot life (on a 500g mix)	minutes		6	5	5	4
Recommended Cure Temperature / Time	°C / hrs		90 / 16	90 / 16	90 / 16	90 / 16
Hardness	DIN 2240-91	Shore A	94	-	-	-
	DIN 2240-91	Shore D	-	45	55-60	70
100% Modulus	BS 903 Pt A2 - ISO 37	lb/in ² (Mpa)	1450 (10.0)	1850 (12.8)	2350 (16.2)	4630 (31.9)
300% Modulus	BS 903 Pt A2 - ISO 37	lb/in ² (Mpa)	3450 (23.8)	4750 (32.8)	5300 (36.6)	-
Tensile Strength	BS 903 Pt A2 - ISO 37	lb/in ² (Mpa)	6150 (42.4)	7200 (49.7)	6000 (41.4)	5650 (39.0)
Elongation at Break	BS 903 Pt A2 - ISO 37	%	395	380	320	205
Tear Strength	BS 903 Pt A3 - ISO 34-1	lb/in (KN/m)	460 (80.5)	540 (94.6)	650 (113.8)	785 (137.5)
Compression Set	BS903 Pt A6 - ISO 815	%	78	-	-	-
Abrasion loss	DIN 53516	mm ³	38	47	50	57
Resilience	ASTM D 2632-92	%	41	41	41	49
Specific Gravity		g/cm ³	1.04	1.04	1.05	1.05

Information contained in the data above is, to the best of our knowledge, true and accurate. Since conditions of use are beyond our control, no warranty is given or implied in respect of any recommendations or suggestions made by ourselves, nor is freedom from patent infringement inferred.

Neuthane 575 + CA575 Curatives - Aliphatic – PTMEG Ether Systems (70 - 95 Shore A)

Neuthane		575	575	575	575	575	575
%NCO (mid-point)	%	7.5	7.5	7.5	7.5	7.5	7.5
Curative		CA575-70	CA575-75	CA575-80	CA575-85	CA575-90	CA575-95
Mix Ratio Curative CA1 per 100 Parts Resin	by weight	57.0	53.0	48.4	43.9	39.0	34.9
Resin Temperature	°C	70	70	70	70	70	70
Curative Temperature	°C	30	30	30	30	30	30
Recommended Mould Temperature	°C	100	100	100	100	100	100
Viscosity @ 100°C (prepolymer)	cps	420	420	420	420	420	420
Pot life (on a 500g mix)	minutes	15	10	10	10	10	10
Recommended Cure Temperature / Time	°C / hrs	100 / 16	100 / 16	100 / 16	100 / 16	100 / 16	100 / 16

Hardness	DIN 2240-91	Shore A	70	75	80	85	90	95
	DIN 2240-91	Shore D	-	-	-	-	-	43
100% Modulus	BS 903 Pt A2 - ISO 37	lb/in ² (Mpa)	225 (1.55)	390 (2.7)	750 (5.2)	790 (5.5)	840 (5.8)	890 (6.1)
300% Modulus	BS 903 Pt A2 - ISO 37	lb/in ² (Mpa)	915 (6.3)	1080 (7.4)	1770 (12.2)	2130 (14.7)	2260 (17.0)	3000 (20.7)
Tensile Strength	BS 903 Pt A2 - ISO 37	lb/in ² (Mpa)	5130 (35.4)	5750 (39.6)	6290 (43.2)	6600 (45.5)	6440 (44.4)	6400 (44.1)
Elongation at Break	BS 903 Pt A2 - ISO 37	%	630	550	480	500	470	450
Tear Strength	BS 903 Pt A3 - ISO 34-1	lb/in (KN/m)	230 (40.6)	315 (55.1)	370 (64.9)	390 (68.5)	420 (73.6)	450 (79.4)
Compression Set	BS903 Pt A6 - ISO 815	%	43	40	38	39	38	37
Abrasion loss	DIN 53516	mm ³	27	25	26	31	29	27
Resilience	ASTM D 2632-92	%	55	50	43	38	39	40
Specific Gravity		g/cm ³	1.02	1.02	1.03	1.03	1.03	1.03

Information contained in the data above is, to the best of our knowledge, true and accurate. Since conditions of use are beyond our control, no warranty is given or implied in respect of any recommendations or suggestions made by ourselves, nor is freedom from patent infringement inferred.



Notedome Ltd
Goldenacres Lane
Binley Industrial Estate
Coventry
CV3 2RT

Tel : +44 (0) 2476 635192/3
Fax : +44 (0) 2476 635509

sales@notedome.co.uk

www.notedome.com

 ***notedome***