



Technical Data Sheet: Neuthane 300 Series

TDI – PPG Ether Prepolymers

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Neuthane 300 Series TDI – PPG Ether Prepolymers (80 - 95 Shore A)

Properties			Processing			Special Considerations		
<p>The Neuthane 300 series of TDI-PPG ether prepolymers are designed to offer a reasonable level of physical properties at a price advantage over TDI-PTMEG systems</p> <p>They offer:</p> <ul style="list-style-type: none"> • a reasonable level of physical properties • low cost • good hydrolysis resistance • ease of use • low viscosity <p>Typical Applications</p> <ul style="list-style-type: none"> • Dunnage • Non-dynamic roller coverings (e.g. conveyor rollers for the steel industry) • Scraper blades (e.g. snow plough blades) • Wheels (low load) 			<p>Processing can be by hand or by dispensing machine.</p> <p>Hand Processing</p> <ul style="list-style-type: none"> • Melt prepolymer at 50-60°C for 12-24 hours • 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 • Part used containers should be flushed with dry nitrogen and resealed immediately after use • The development of cure is longer than for PTMEG systems. Rapid temperature changes during the early stage of cure should be avoided <p>Alternatives</p> <ul style="list-style-type: none"> • Dynamic / Resilience – Neuthane 100 [TDI-PTMEG] or Neuthane 600 [MDI-PTMEG] • Solvents / Abrasion – ester based systems should be considered Neuthane 200 [TDI] or Neuthane 700 [MDI] • Humid / Wet – MDI or Aliphatic Isocyanate based systems should be considered: Neuthane 600 [MDI] or Neuthane 500 [Aliphatic] 		
COST	PROCESSING	ABRASION	DYNAMIC	RESILIENCE	SOLVENT	HUMID/WET	TEMPERATURE	UV STABILITY

Key

Excellent / Good

Good / Average

Average / Poor

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Neuthane		335	343	353	363S	363
%NCO (mid-point)	%	3.5	4.6	5.3	6.3	6.3
Curative		MOCA	MOCA	MOCA	MOCA	MOCA
Mix Ratio Curative per 100 Parts Resin	%	10.6	13.9	15.9	19.0	19.0
Recommended Stoichiometry	by weight	95	95	95	95	95
Resin Temperature	°C	75	70	70	70	65
Curative Temperature	°C	110	110	110	110	110
Recommended Mould Temperature	°C	90	90	90	80	85
Viscosity @ 100°C (prepolymer)	cps	160	140	140	100	100
Pot life (on a 500g mix)	minutes	9	8	8	8	5
Recommended Cure Temperature / Time	°C / hrs	95 / 20	95 / 20	95 / 20	90 / 20	90 / 20

Hardness	DIN 2240-91	Shore A	82	87	92	93	95
	DIN 2240-91	Shore D	-	-	-	-	-
100% Modulus	BS 903 Pt A2 - ISO 37	lb/in ² (Mpa)	590 (4.1)	930 (6.4)	1500 (10.3)	1910 (13.2)	2250 (15.5)
300% Modulus	BS 903 Pt A2 - ISO 37	lb/in ² (Mpa)	1200 (8.3)	860 (5.9)	3010 (20.8)	2020 (14.0)	2390 (16.5)
Tensile Strength	BS 903 Pt A2 - ISO 37	lb/in ² (Mpa)	2650 (18.3)	1830 (12.6)	5210 (35.9)	4270 (29.5)	4570 (31.5)
Elongation at Break	BS 903 Pt A2 - ISO 37	%	670	470	420	400	340
Tear Strength	BS 903 Pt A3 - ISO 34-1	lb/in (KN/m)	320 (56.0)	400 (70.3)	385 (67.7)	410 (71.8)	460 (80.6)
Compression Set	BS903 Pt A6 - ISO 815	%	38	36	37	43	38
Abrasion loss	DIN 53516	mm ³	159	121	119	132	118
Resilience	ASTM D 2632-92	%	40	30	29	27	28
Specific Gravity		g/cm ³	1.08	1.12	1.13	1.14	1.14

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.



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