Technical Data Sheet: NEUTHANE 801NG Series

MDI - PTMEG Quasi Systems

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QUALITY SYSTEM CERTIFICATION DNV·GL ISO 9001:2015

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NEUTHANE 801-NG (3 Component) MDI - PTMEG Quasi Systems (60 - 95 Shore A)

Properties

The NEUTHANE 801 series are high performance MDI - PTMEG ether quasi systems designed to produce items for use in arduous application areas.

They offer:

- a high level of physical properties
- good dynamic performance
- good hydrolysis resistance
- high resilience
- low viscosity
- low process temperatures

Typical Applications

- Wheels (e.g. fork truck, pallet truck and press on bands)
- In-line roller blade wheels
- Mining and quarrying (e.g. screen decks, scraper blades)
- Hydrocyclones
- Automotive (e.g. suspension bushes)
- Roll covering

Processing

Processing can be carried out by hand or by dispensing machine.

Hand Processing

- Melt ISO component at 30-40°C, POLYOL component at 50-60°C and BD at 40°C for 12-24 hours
- Ensure components are completely liquid and thoroughly mixed prior to use
- Bring all components to the recommended process temperature.
- Add pigments and Antifoam (as applicable) to the polyol component whilst mixing
- It is recommended that air be removed from the ISO component under vacuum prior to addition of the curative
- Add all components 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.

Special Considerations

Processing

- Avoid moisture contamination of all materials.
- Part used containers should be flushed with dry nitrogen and resealed immediately after use
- It is vital to ensure that both components are completely liquid and thoroughly mixed prior to use
- Due to the exothermic nature of the system, larger mixes will have a shorter pot life

Alternatives

- ***Solvents*** - ester based systems should be considered: NEUTHANE 200 [TDI], NEUTHANE 700 [MDI prepolymer] or NEUTHANE 802 [MDI quasi]
- ***Cost*** – Ester systems can be considered: NEUTHANE 700 [MDI prepolymer] or NEUTHANE 802 & 803 [MDI quasi]
- ***Temperature*** – NEUTHANE 100 [TDI PTMEG] or NEUTHANE 500 [Aliphatic Isocyanate] based systems may be considered

COST	PROCESSING	ABRASION	DYNAMIC	RESILIENCE	SOLVENT	HUMID/WET	TEMPERATURE	UV STABILITY

Key Excellent / Good | Good / Average | Average / Poor

NEUTHANE 801-NG (3 Component) MDI - PTMEG Quasi Systems (60 - 95 Shore A)

Neuthane		60	65	70	75
Mix Ratio N801 ISO-NG	by weight	100	100	100	100
Mix Ratio N801 POLY-NG UC	by weight	270.4	238.2	218.2	168.2
Mix Ratio Butanediol	by weight	5.6	7.3	8.3	10.9
NEUTHANE 801ISO-NG Operating Temperature (OT)	°C	45	45	45	45
NEUTHANE 801POLY-NG Operating Temperature (OT)	°C	55	55	55	55
Butanediol Operating Temperature (OT)	°C	45	45	45	45
NEUTHANE 801ISO-NG Viscosity / SG (at OT)	cPs / g/cm³	232 / 1.121	232 / 1.121	232 / 1.121	232 / 1.121
NEUTHANE 801POLY-NG Viscosity / SG (at OT)	cPs / g/cm³	440 / 0.965	440 / 0.965	440 / 0.965	440 / 0.965
Butanediol Viscosity / SG (at OT)	cPs / g/cm³	33 / 1.002	33 / 1.002	33 / 1.002	33 / 1.002
Recommended Mould Temperature	°C	90 - 100	90 - 100	90 - 100	90 - 100
Pot life (250g mix adjustable with Cat 44 level)	minutes	2-4	2-4	2-4	2-4
Recommended Cure Temperature / Time	°C / hrs	70 / 16	70 / 16	70 / 16	70 / 16

Hardness	DIN 2240-91	Shore A	60	65	70	75
	DIN 2240-91	Shore D	-	-	-	-
100% Modulus	BS 903 Pt A2 - ISO 37	lb/in² (Mpa)	290 (2)	304 (2.1)	377 (2.6)	536 (3.7)
300% Modulus	BS 903 Pt A2 - ISO 37	b/in² (Mpa)	536 (3.7)	609 (4.2)	812 (5.6)	1174 (8.1)
Tensile Strength	BS 903 Pt A2 - ISO 37	b/in² (Mpa)	1247 (8.6)	1595 (11)	2074 (14.3)	2610 (18)
Elongation at Break	BS 903 Pt A2 - ISO 37	%	437	425	411	446
Tear (Die C)	ISO 34-1	KN/m	33.9	37	42.8	65
Compression Set	BS903 Pt A6 - ISO 815	%				
Abrasion loss	DIN 53516	mm³	<50	<50	<50	<50
Resilience	ASTM D 2632-92	%	66	65	62	55
Specific Gravity		g/cm³	-	-	-	-

NEUTHANE 801-NG (3 Component) MDI - PTMEG Quasi Systems (60 - 95 Shore A)

Neuthane		80	85	90	95
Mix Ratio N801 ISO-NG	by weight	100	100	100	100
Mix Ratio N801 POLY-NG UC	by weight	127.9	97.7	77.7	37.6
Mix Ratio Butanediol	by weight	13.00	14.60	15.60	17.70
NEUTHANE 801ISO-NG Operating Temperature (OT)	°C	45	45	45	45
NEUTHANE 801POLY-NG Operating Temperature (OT)	°C	55	55	55	55
Butanediol Operating Temperature (OT)	°C	45	45	45	45
NEUTHANE 801ISO-NG Viscosity / SG (at OT)	cPs / g/cm³	232 / 1.121	232 / 1.121	232 / 1.121	232 / 1.121
NEUTHANE 801POLY-NG Viscosity / SG (at OT)	cPs / g/cm³	440 / 0.965	440 / 0.965	440 / 0.965	440 / 0.965
Butanediol Viscosity / SG (at OT)	cPs / g/cm³	33 / 1.002	33 / 1.002	33 / 1.002	33 / 1.002
Recommended Mould Temperature	°C	90 - 100	90 - 100	90 - 100	90 - 100
Pot life (250g mix adjustable with Cat 44 level)	minutes	2-4	2-4	2-4	2-4
Recommended Cure Temperature / Time	°C / hrs	70 / 16	70 / 16	70 / 16	70 / 16

Hardness	**DIN 2240-91**	Shore A	**80**	**85**	**90**	**95**
	DIN 2240-91	Shore D	-	-	-	-
100% Modulus	BS 903 Pt A2 - ISO 37	lb/in² (Mpa)	768 (5.3)	1015 (7)	1392 (9.6)	2697 (18.6)
300% Modulus	BS 903 Pt A2 - ISO 37	b/in² (Mpa)	1754 (12.1)	2074 (14.3)	2668 (18.4)	3843 (26.5)
Tensile Strength	BS 903 Pt A2 - ISO 37	b/in² (Mpa)	2929 (20.2)	4641 (32)	4931 (34)	4235 (29.2)
Elongation at Break	BS 903 Pt A2 - ISO 37	%	403	493	471	359
Tear (Die C)	ISO 34-1	KN/m	74.5	87	102.5	113
Compression Set	BS903 Pt A6 - ISO 815	%				
Abrasion loss	DIN 53516	mm³	<50	<50	<50	<50
Resilience	ASTM D 2632-92	%	51	48	41	35
Specific Gravity		g/cm³	-	-	-	-

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