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Erapol RNSA90A

HIGH PERFORMANCE POLYESTER POLYURETHANE

TECHNICAL DATASHEET

Erapol RNSA90A is an isocyanate-terminated polyester based urethane prepolymer. It is formulated for use with MOCA curative. It features longer gel time and lower viscosity than Erapol RN3039 for easier processing.

Erapol RNSA90A elastomers provide properties generally not available with rubbers, plastics or metals. They show improved solvent and oil resistance and better thermal stability than most general-purpose rubbers and plastics. Other outstanding properties include high abrasion and tear resistance, excellent load-bearing capacity, toughness and resiliency.

Product Specification

% NCO	4.55 ± 0.20
Viscosity at 80°C (cps)	1200 - 1800
Colour	Clear, light amber

Mixing and Curing Conditions

		RNSA90A / MOCA	RNSA90A / Ethacure 300	RNSA90A / Eracure 110
Erapol RNSA90A	(pph)	100	100	100
MOCA Level	(pph)	13.7	-	-
Ethacure 300 level	(pph)	-	11.0	-
Eracure 110 level	(pph)	-	-	11.8
Recommended % Theory		95	95	95
Erapol Temperature	(°C)	75 - 85	65	65
Curative Temperature	(°C)	110 - 120	25 - 30	25 - 30
Pot Life*	(mins)	4	4	4
Demould Time at 100°C**	(hrs)	1	1	1
Post Cure Time at 100°C	(hrs)	16	16	16

* Pot life based on a 200g sample, prepolymer at 80°C, MOCA at 100°C
** Demould time based on a 200g rectangular slab. Demould time will depend on the size and shape of the cast part.

Physical Properties

Properties presented below are to be used as a guide and not intended for specification purposes.

		RNSA90A/MOCA	RNSA90A/E300	RNSA90A/E110	TEST METHOD
Hardness	(Shore A)	90 ± 3	85 ± 3	85 ± 3	ASTM D2240
Tensile Strength	MPa (psi)	53.0 (7687)	45.0 (6527)	45.0 (6527)	ASTM D412
100% Modulus	MPa (psi)	5.2 (754)	-	-	ASTM D412
200% Modulus	MPa (psi)	10.3 (1494)	-	-	ASTM D412
Angle Tear Strength, Die C	(kN/m)	100	100	90	ASTM D624
Trouser Tear Strength	(kN/m)	45	45	40	AS1683.12
Elongation	(%)	650	690	700	ASTM D412
DIN Resilience	(%)	40	40	40	DIN 53512
DIN Abrasion Resistance 10N	(mm^3)	60	60	40	ASTM D5963
DIN Abrasion Resistance 5N	(mm^3)	30	30	20	ASTM D5963
Compression Set / 22 hr at 70°C	(%)	30	-	-	ASTM D395
Cured Specific Gravity	(g/cm^3)	1.26	1.25	1.25	ASTM D1817

Processing Procedure

1. Heat pre-weighed amounts of **Erapol RNSA90A** to 80-100°C and degas at -95kpa of vacuum for at least 5 minutes or until excessive bubbling stops. Containers should be unlined metal, plastic or glass and should be large enough to allow for foaming during degassing.

2. MOCA must be melted at 120°C prior to mixing, Ethacure 300 and Eracure 110 can be used at room temperature. After adding the curative, mix thoroughly and degas at -95kpa for 1 to 2 minutes.

3. Pour mixed system into moulds, preheated to 100°C, that have been coated with **Salease** mould release or equivalent.

4. Cure in accordance with above recommendations.

Adhesion

Adhesion of Erapol based elastomers to various substrates is at best marginal if a primer is not used. Please consult Era Polymers for specific recommendations to improve adhesion.

Handling Precautions

Consult the product's material safety data sheet (MSDS) for specific hazard and handling information before use.

Erapol RNSA90A contains small amounts of free TDI. Therefore the product should be used in well-ventilated areas. Avoid breathing in vapours and protect skin and eyes from contact.

In case of skin contact, immediately remove excess, wash with soap and water. For eye contact, immediately flush with water for at least 15 minutes.

If nose, throat or lungs become irritated from breathing in vapours, remove exposed person to fresh air. Call a physician.