

TECHNICAL DATASHEET

Erapol ESA93A is a liquid isocyanate terminated pre-polymer based on PTMEG polyol.

Polymers made from **Erapol ESA93A** exhibit outstanding abrasion resistance, high load bearing capability, low heat build-up and excellent low temperature flexibility.

Application

Typical used for this polymer include forklift and caster wheels, screens, cyclones etc.

Product Specification

% NCO	5.00 ± 0.20
Specific Gravity at 25°C	1.05
Viscosity at 80°C (cPs)	500 - 900
Colour	Clear, light amber

Mixing and Curing Conditions

		ESA93A/MOCA	ESA93A/Ethacure 300	ESA93A/Eracure 110
Erapol ESA93A	(pph)	100	100	100
MOCA Level	(pph)	15.1	-	-
Ethacure 300 Level	(pph)	-	12.1	-
Eracure 110 Level	(pph)	-	-	12.9
Recommended % Theory		95	95	95
Erapol Temperature	(°C)	75 - 85	65 - 75	65 - 75
Curative Temperature	(°C)	110 - 120	20 - 30	20 - 30
Pot Life	(mins)	8	8	8
Demould Time at 100°C	(hrs)	1	1	1
Post Cure Time at 100°C	(hrs)	16	16	16

This information is of general nature and is supplied without recommendation of guarantee. It does not make claim to be free from patent infringement. Properties shown are typical and do not imply specification tolerances. Era Polymers cannot accept liability for loss or damage through use. Whilst these technical details are based on expert knowledge, practical experience and laboratory testing, successful application depends upon the nature and conditions in which the products are supplied. Users must, by comprehensive testing, evaluate this product in their own application.

Physical Properties

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

		ESA93A/MOCA	ESA93A/E300*	ESA93A/E110**	TEST METHOD
Hardness	(Shore A)	93 ± 3	93 ± 3	89 ± 3	ASTM D2240
Tensile Strength	MPa (psi)	43.0 (6237)	40.0 (5802)	34.0 (4931)	ASTM D412
100% Modulus	MPa (psi)	11.0 (1595)	7.6 (1102)	10.0 (1450)	ASTM D412
200% Modulus	MPa (psi)	12.5 (1813)	11.4 (1653)	14.0 (2031)	ASTM D412
300% Modulus	MPa (psi)	17.9 (2596)	15.5 (2248)	19.0 (2756)	ASTM D412
Elongation	(%)	420	420	379	ASTM D412
Angle Tear Strength, Die C	(kN/m)	86	85	99	ASTM D624
Trouser Tear Strength	(kN/m)	39	39	35	AS1683.12
DIN Resilience	(%)	50	50	54	DIN 53512
DIN Abrasion Resistance 10N	(mm ³)	60	62	27	ASTM D5963
DIN Abrasion Resistance 5N	(mm ³)	22	22	17	ASTM D5963
Compression Set / 22 hr at 70°C	(%)	28	40	33	ASTM D395
Cured Density	(g/cm ³)	1.10	1.10	1.10	ASTM D1817

Please note * Ethacure 300

** Eracure 110

Processing Procedure

1. **Erapol ESA93A** should be heated to $80 \pm 5^\circ\text{C}$ and thoroughly degassed at -95 kPa of vacuum until excessive foaming stops.
2. The curative should be added to **ESA93A**, the MOCA must first be melted at $110 - 120^\circ\text{C}$ prior to mixing and Ethacure 300/Eracure 110 processed at room temperature. After adding the curative, mix thoroughly, being careful not to introduce air into the mixture.
3. Pour mixed materials into moulds that have been preheated to $80 - 100^\circ\text{C}$ and pre-coated with release agent.

NOTE: If a longer pot life is required, then **ESA93A** should be used at $70 - 75^\circ\text{C}$, MOCA at $110 - 120^\circ\text{C}$ or Ethacure 300/Eracure 110 at room temperature. Post cure temperature should be increased to $100 - 110^\circ\text{C}$ to avoid glassiness in the final polymer. Shrinkage will also be minimised if the above conditions are used.

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

Erapol ESA93A 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. Call a physician.

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

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