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AUSTRALIA
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Erapol ECP93A

HIGH PERFORMANCE POLYCAPROLACTONE
BASED POLYURETHANE ELASTOMER

TECHNICAL DATASHEET

Erapol ECP93A is a premium product based on polycaprolactone polyols, which when cured with MOCA produces a 93 Shore A elastomer. The polyurethane elastomer exhibits excellent mechanical properties, similar to that of standard polyester polyurethanes, but with the advantage of superior hydrolysis resistance.

Application

Polymers made from **Erapol ECP93A** exhibit outstanding abrasion resistance, high load bearing capability, low heat build-up and excellent low temperature flexibility.

Typical uses for this polymer include caster and forklift wheels, screens, cyclones and many other end use applications.

Product Specification

% NCO	5.0 – 5.4
Specific Gravity at 25°C	1.10
Viscosity at 80°C (cps)	700 - 1200
Colour	Clear, light amber

Mixing and Curing Conditions

		ECP93A / MOCA	ECP93/Ethacure 300	ECP93A /AH41
Erapol ECP93A	(pph)	100	100	100
MOCA Level	(pph)	15.7	-	-
Ethacure 300 level	(pph)	-	12.6	-
AH-41 level	(pph)	-	-	15.7
Recommended % Theory		95	95	95
Erapol Temperature	(°C)	75 - 85	65-75	65 - 75
Curative Temperature	(°C)	110 - 120	20-25	20 - 25
Pot Life	(mins)	7	4	45 seconds
Demould Time at 100°C	(hrs)	1	1	0.5-1
Post Cure Time at 100°C	(hrs)	16	16	16

All results are based on 200 grams of **Erapol ECP93A** at 80°C.



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.

		ECP93A/ MOCA	ECP93/ Ethacure 300	ECP93A/ AH-41	TEST METHOD
Hardness	(Shore A)	93 ± 3	91 ± 3	90 ± 3	AS1683.15
Tensile Strength	MPa (psi)	42.0 (6091)	48.0 (6961)	-	AS1683.11
100% Modulus	MPa (psi)	-	-	-	AS1683.11
200% Modulus	MPa (psi)	-	-	-	AS1683.11
300% Modulus	MPa (psi)	-	-	-	AS1683.11
Angle Tear Strength, Die C	(kN/m)	116	105	-	AS1683.12
Trouser Tear Strength	(kN/m)	34	36	-	AS1683.12
Elongation	(%)	480	425	-	AS1683.11
DIN Resilience	(%)	42	38	-	DIN 53512
DIN Abrasion Resistance 10N	(mm ³)	66	77	-	AS1683.21
DIN Abrasion Resistance 5N	(mm ³)	33	38	-	AS1683.21
Compression Set / 22 hr at 70°C	(%)	32	-	-	AS1683.13
Cured Specific Gravity	(g/cm ³)	1.20	1.15	1.14	AS1683.4

(*) NOTE: AH-41 is for machine processing only.

Processing Procedure

1. **Erapol ECP93A** should be heated to 75-85°C and thoroughly degassed at -95 KPa of vacuum until excessive foaming stops.
2. The Curative should be added to **Erapol ECP93A**, the MOCA must first be melted at 110 - 120°C prior to mixing and Ethacure 300 LC processed at room temperature. After adding the curative, mix thoroughly, being careful not to introduce air into the mixture.
3. Pour mixed **Erapol ECP93A/MOCA** or **ECP93A/Ethacure 300** LC into moulds which have been preheated to 100-110°C and pre-coated with release agent.
4. Cure mixed **Erapol ECP93A** between 100-110°C for 16 hours, to produce maximum physical properties.

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 ECP93A 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.