



Era Polymers Pty. Ltd.
2-4 Green Street, Banksmeadow
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AUSTRALIA
www.erapol.com.au

Erapol ECP95A

HIGH PERFORMANCE POLYCAPROLACTONE
BASED POLYURETHANE ELASTOMER

TECHNICAL DATASHEET

Erapol ECP95A is a premium product based on polycaprolactone polyols, which when cured with Moca produces a 95 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 ECP95A** 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	5.8 ± 0.2
Specific Gravity at 77°F (25°C)	1.10
Viscosity at 176°F (80°C) (cps)	700 - 1100
Colour	Clear, light amber

Mixing and Curing Conditions

		ECP95A / MOCA	ECP95A / E300*	ECP95A / AH41
Erapol ECP95A	(pph)	100	100	100
MOCA Level	(pph)	17.5	-	-
Ethacure 300 level	(pph)	-	14.1	-
AH41 level	(pph)	-	-	14.4
Recommended % Theory		95	95	95
Erapol Temperature	°F (°C)	167-185 (75-85)	149-167 (65-75)	149-167 (65-75)
Curative Temperature	°F (°C)	230-248 (110-120)	68 - 77 (20 - 25)	68 - 77 (20 - 25)
Pot Life	(mins)	4 - 5	3 - 4	0.5
Demould Time at 212°F (100°C)	(mins)	30	30	30
Post Cure Time at 212°F (100°C)	(hrs)	16	16	16

All results are based on 200 grams of **Erapol ECP95A** at 176°F (80°C).

*Eracure 300



This information is of general nature and is supplied without recommendation or 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.

		ECP95A / MOCA	ECP95A / Eracure 300	ECP95A / AH41	TEST METHOD
Hardness	(Shore A)	95 ± 3	94 ± 3	92 ± 3	ASTM D2240
100% Modulus	psi (MPa)	1638 (11.3)	-	-	ASTM D412
300% Modulus	psi (MPa)	4496 (31.0)	-	-	ASTM D412
Tensile Strength	psi (MPa)	7252 (50)	5946 (41)	-	ASTM D412
Elongation	(%)	420	465	-	ASTM D412
Angle Tear Strength, Die C	pli (kN/m)	685 (120)	708 (124)	-	ASTM D624
DIN Resilience	(%)	35	-	-	DIN 53512
DIN Abrasion Resistance 10N	(mm ³)	58	75	-	ASTM D5963
DIN Abrasion Resistance 5N	(mm ³)	35	44	-	ASTM D5963
Compression Set / 22 hr at 158°F	(%)	30	28	31	ASTM D395, B
Cured Specific Gravity	(g/cm ³)	1.20	1.15	1.14	ASTM D1817

NOTE: AH41 is for machine processing only.

Processing Procedure

1. **Erapol ECP95A** should be heated to 167 - 185°F (75 - 85°C) and thoroughly degassed at -95 kPa of vacuum until excessive foaming stops.
2. The Curative should be added to **Erapol ECP95A**, the MOCA must first be melted at 230 - 248°F (110 - 120°C) prior to mixing and Eracure 300 processed at room temperature. After adding the curative, mix thoroughly, being careful not to introduce air into the mixture.
3. Pour mixed **Erapol ECP95A/MOCA** or **ECP95A/Eracure 300** into moulds which have been preheated to 100-110°C and pre-coated with release agent.
4. Cure mixed **Erapol ECP95A** between 212 – 230°F (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 ECP95A 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.