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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	5.2 ± 0.2
Specific Gravity at 77°F	1.10
Viscosity at 176°F (cps)	700 - 1200
Colour	Clear, light amber

Mixing and Curing Conditions

		ECP93A / MOCA	ECP93/Eracure 300	ECP93A /AH41
Erapol ECP93A	(pph)	100	100	100
MOCA Level	(pph)	15.7	-	-
Eracure 300 level	(pph)	-	12.6	-
AH41 level	(pph)	-	-	12.9
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)	7	4	45 seconds
Demould Time at 212°F	(hrs)	1	1	0.5 - 1
Post Cure Time at 212°F	(hrs)	16	16	16

All results are based on 200 grams of **Erapol ECP93A** at 176°F.

Physical Properties

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

		ECP93A/ MOCA	ECP93/ Eracure 300	ECP93A/ AH41	TEST METHOD
Hardness	(Shore A)	93 ± 3	91 ± 3	90 ± 3	ASTM D2240
Tensile Strength	psi (MPa)	6091 (42)	6961 (48)	-	ASTM D412
Elongation	(%)	480	425	-	ASTM D412
Angle Tear Strength, Die C	pli (kN/m)	662 (116)	600 (105)	-	ASTM D624
DIN Resilience	(%)	42	38	-	DIN 53512
DIN Abrasion Resistance 10N	(mm^3)	66	77	-	ASTM D5963
DIN Abrasion Resistance 5N	(mm^3)	33	38	-	ASTM D5963
Compression Set / 22 hr at 158°F	(%)	32	-	-	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 ECP93A** should be heated to 167 - 185°F 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 230 - 248°F 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 ECP93A/MOCA** or **ECP93A/Eracure 300** into moulds which have been preheated to 212 - 230°F and pre-coated with release agent.

4. Cure mixed **Erapol ECP93A** between 212 - 230°F 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.