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AUSTRALIA
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Erapol ECP57D

HIGH PERFORMANCE POLYCAPROLACTONE
BASED POLYURETHANE ELASTOMER

TECHNICAL DATASHEET

Erapol ECP57D is a premium product based on polycaprolactone polyols, which when cured with MOCA produces a 57 Shore D elastomer. The polyurethane elastomer exhibits excellent mechanical properties, similar to that of standard polyester polyurethanes, but with the added advantage of superior hydrolysis resistance.

Application

Polymers made from **Erapol ECP57D** exhibit outstanding abrasion resistance, high load bearing capability, low heat build-up and excellent low temperature flexibility.

Product Specification

% NCO	7.20 ± 0.20
Specific Gravity at 77°F	1.11
Viscosity at 176°F (cPs)	300 - 800
Colour	Clear, light amber

Mixing and Curing Conditions

		ECP57D / MOCA	ECP57D / Eracure 300	ECP57D / Eracure 110
Erapol ECP57D	(pbw)	100	100	100
MOCA	(pbw)	21.8	-	-
Eracure 300	(pbw)	-	17.4	-
Eracure 110	(pbw)	-	-	18.6
Recommended % Theory		95	95	95
Erapol Temperature	°F (°C)	140 - 158 (60 - 70)	140 - 158 (60 - 70)	140 - 158 (60 - 70)
Curative Temperature	°F (°C)	230 - 248 (110 - 120)	68 - 77 (20 - 25)	68 - 77 (20 - 25)
Pot Life	(mins)	~ 2-3	~ 2	~ 2
Demould Time at 212-230°F	(mins)	20	30	30
Post Cure Time at 212-230°F	(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.

		ECP57D/MOCA	ECP57D/E300*	ECP57D/E110**	TEST METHOD
Hardness	(Shore D)	57 ± 3	56 ± 3	55 ± 3	ASTM D2240
Tensile Strength	psi (MPa)	7527 (51.9)	5627 (38.8)	5424 (37.4)	ASTM D412
100% Modulus	psi (MPa)	2814 (19.4)	-	-	ASTM D412
300% Modulus	psi (MPa)	43.7 (6338)	-	-	ASTM D412
Elongation	(%)	345	335	345	ASTM D412
Angle Tear Strength, Die C	pli (kN/m)	742 (130)	799 (140)	771 (135)	ASTM D624
DIN Resilience	(%)	44	45	44	DIN 53512
DIN Abrasion Resistance 10N	(mm ³)	70	76	56	ASTM D5963
DIN Abrasion Resistance 5N	(mm ³)	35	35	28	ASTM D5963
Compression Set / 22 hr at 158°F	(%)	23	37	31	ASTM D395, B
Cured Density	(g/cm ³)	1.15	1.14	1.14	ASTM D1817

*Eracure 300, **Eracure 110

Processing Procedure

1. **Erapol ECP57D** should be heated to 140 - 158°F and thoroughly degassed at -95 KPa of vacuum until excessive foaming stops.
2. The Curative should be added to **Erapol ECP57D**, the MOCA must first be melted at 230 - 248°F prior to mixing, and Eracure 300 and Eracure 110 can be used at ambient temperature. After adding the curative, mix thoroughly, being careful not to introduce air into the mixture.
3. Pour mixed **Erapol ECP57D** into moulds that have been preheated to 212 - 230°F and pre-coated with release agent.
4. Cure mixed **Erapol ECP57D** 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 recommendation to improve adhesion.

NOTE: It is important that all dirt, rust, grease and all be removed from surfaces prior to applying the primers.



Handling and Storage

Erapol ECP57D contains low 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.

Recommended storage temperature is 68°F to 86°F (20°C to 30°C). Shelf life is 12 months after receipt of product by customer, when stored in closed, original containers at 77°F (25°C).