

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

7.20 ± 0.20	
1.11	
300 - 800	
Clear, light amber	

Mixing and Curing Conditions

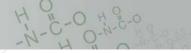
	//////	ECP57D /	ECP57D /	ECP57D /	
	///////	MOCA	Ethacure 300	Ethacure 110	
Erapol ECP57D	(pbw)	100	100	100	
MOCA	(pbw)	21.8	//// - ////////////////////////////////	-	
Ethacure 300	(pbw)	M 1/1//	17.4	-	
Eracure 110	(pbw)	1411-1///	///// / //////	18.6	
Recommended % Theory		95	95	95	
Erapol Temperature	(°C)	60-70	60-70	60-70	
Curative Temperature	(°C)	110 - 120	20-25	20-25	
Pot Life	(mins)	~ 2-3	~ 2	~ 2	
Demould Time at 100-110°C	(mins)	20	30	30	
Post Cure Time at 100-110°C	(hours)	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.

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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	AS1683.15
Tensile Strength	MPa (psi)	43 (6237)	38.8 (5627)	37.4 (5424)	AS1683.11
100% Modulus	MPa (psi)	7.9 (1146)	-	-	AS1683.11
200% Modulus	MPa (psi)	17.8 (2582)	-	-	AS1683.11
300% Modulus	MPa (psi)	11.9 (1726)		-	AS1683.11
Angle Tear Strength, Die C	(kN/m)	145	155	147	AS1683.12
Trouser Tear Strength	(kN/m)		52.7	49	AS1683.12
Elongation	(%)	265	335	345	AS1683.11
DIN Resilience	(%)	32	45	44	DIN 53512
DIN Abrasion Resistance 10	N (mm³)	70	76	56	AS1683.21
DIN Abrasion Resistance 5N	(mm³)	35	35	28	AS1683.21
Compression Set / 22 hr at 7	'0°C (%)	35	<u>-</u>	31	AS1683.13
Cured Specific Gravity	(g/cm³)	1.15	1.14	1.14	AS1683.4

Processing Procedure

- 1. **Erapol ECP57D** should be heated to 80-85°C 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 110 120°C prior to mixing and Ethacure 300 LC can be used at ambient temperature, e.g. 20-25°C. After adding the curative, mix thoroughly, being careful not to introduce air into the mixture.
- 3. Pour mixed **Erapol ECP57D**/MOCA into moulds that have been preheated to 100-110°C and pre-coated with release agent.
- 4. Cure mixed **Erapol ECP57D** between 100-110°C for 16 hours, to produce maximum physical properties.



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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.

The following primers are recommended for the various substrates.

AD-6: Two component metal primer, room temperature cures.

AD-1147: Single component metal primer, ambient to 100°C cure.

PR-1167: Single component primer for rubber and polyurethanes.

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

Handling Precautions

Erapol ECP57D contains low amounts of free TDI; 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.



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