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Sydney, NSW 2019  
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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 25°C	1.11
Viscosity at 80°C (cps)	300 - 800
Colour	Clear, light amber

#### Mixing and Curing Conditions

		ECP57D / MOCA	ECP57D / Ethacure 300	ECP57D / Ethacure 110
Erapol ECP57D	(pbw)	100	100	100
MOCA	(pbw)	21.8	-	-
Ethacure 300	(pbw)	-	17.4	-
Eracure 110	(pbw)	-	-	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



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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
<b>Hardness</b>	(Shore D)	57 ± 3	56 ± 3	55 ± 3	AS1683.15
<b>Tensile Strength</b>	MPa (psi)	43 (6237)	38.8 (5627)	37.4 (5424)	AS1683.11
<b>100% Modulus</b>	MPa (psi)	7.9 (1146)	-	-	AS1683.11
<b>200% Modulus</b>	MPa (psi)	17.8 (2582)	-	-	AS1683.11
<b>300% Modulus</b>	MPa (psi)	11.9 (1726)	-	-	AS1683.11
<b>Angle Tear Strength, Die C</b>	(kN/m)	145	155	147	AS1683.12
<b>Trouser Tear Strength</b>	(kN/m)	-	52.7	49	AS1683.12
<b>Elongation</b>	(%)	265	335	345	AS1683.11
<b>DIN Resilience</b>	(%)	32	45	44	DIN 53512
<b>DIN Abrasion Resistance 10N</b>	(mm <sup>3</sup> )	70	76	56	AS1683.21
<b>DIN Abrasion Resistance 5N</b>	(mm <sup>3</sup> )	35	35	28	AS1683.21
<b>Compression Set / 22 hr at 70°C</b>	(%)	35	-	31	AS1683.13
<b>Cured Specific Gravity</b>	(g/cm <sup>3</sup> )	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.

## 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.