



Era Polymers Pty. Ltd.
2-4 Green Street, Banksmeadow
Sydney, NSW 2019
AUSTRALIA
www.erapol.com.au

Erapol RN50D

HIGH PERFORMANCE POLYESTER POLYURETHANE

TECHNICAL DATASHEET

Erapol RN50D is an isocyanate-terminated polyester based urethane prepolymer. It is formulated for use with MOCA curative. It features a longer gel time than Erapol RN3050 for easier processing.

Application

Erapol RN50D elastomers provide properties generally not available with rubbers, plastics or metals. They show improved solvent and oil resistance and better thermal stability than most general-purpose rubbers and plastics. Other outstanding properties include high abrasion and tear resistance, excellent load-bearing capacity, toughness and resiliency.

Product Specification

Colour	Clear, Light Amber
% NCO	5.1 ± 0.2
Viscosity at 80°C (cps)	1200 - 1800

Mixing and Curing Conditions

		RN50D/ MOCA	RN50D / Ethacure 300	RN50D / Eracure 110
Erapol RN50D	(pph)	100	100	100
MOCA level	(pph)	15.4	-	-
Ethacure 300 level	(pph)	-	12.4	-
Eracure 110 level	(pph)	-	-	13.1
Recommended % Theory		95	95	95
Erapol Temperature	(°C)	75 - 85	65	65
Curative Temperature	(°C)	100 - 110	25 - 30	25 - 30
Pot Life *	(mins)	4 - 5	4- 5	4 - 5
Demould Time at 100°C **	(hrs)	1	1	1
Post Cure Time at 100°C	(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.

* Pot life based on a 200g sample, prepolymer at 80°C, MOCA at 100°C, Ethacure 300 and Eracure 110 at 25C.

** Demould time based on a 200g rectangular slab. Demould time will depend on the size and shape of the cast part, the mould temperature and the curing temperature.

Physical Properties

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

		RN50D/ MOCA	RN50D / Ethacure 300	RN50D / Eracure 110	TEST METHOD
Hardness	(Shore D)	50 ± 3	45 ± 3	45 ± 3	AS1683.15
Tensile Strength	MPa (psi)	54.1 (7846)	50.7 (7353)	49.4 (7164)	AS1683.11
100% Modulus	MPa (psi)	9.2 (1334)	8.4 (1218)	8.6 (1247)	AS1683.11
300% Modulus	MPa (psi)	17.4 (2523)	12.1 (1754)	12.3 (1783)	AS1683.11
Angle Tear Strength, Die C	(kN/m)	124	121.3	123.5	AS1683.12
Trouser Tear Strength	(kN/m)	49	55.8	57.2	AS1683.12
Elongation	(%)	550	650	660	AS1683.11
DIN Resilience	(%)	29	28	28	DIN 53512
DIN Abrasion Resistance 10N	(mm ³)	70	-	-	AS1683.21
DIN Abrasion Resistance 5N	(mm ³)	33	-	-	AS1683.21
Compression Set / 22 hr at 70°C	(%)	30	-	-	AS1683.13
Cured Specific Gravity	(g/cm ³)	1.28	1.27	1.27	AS1683.4

Processing Procedure

1. Heat pre-weighed amounts of **Erapol RN50D** to 80-100°C and degas at -95Kpa of vacuum for at least 5 minutes or until excessive bubbling stops. Containers should be unlined metal, plastic or glass and should be large enough to allow for foaming during degassing.
2. MOCA must be melted at 120°C prior to mixing. Ethacure 300 and Eracure 110 can be used at room temperature. After adding curative, mix thoroughly and degas at -95Kpa for 1 to 2 minutes.
3. Pour mixed system into moulds, preheated to 100°C, which have been coated with **Salease** mould release or equivalent.
4. Cure in accordance with above recommendations.



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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 recommendations to improve adhesion.

Handling Precautions

Consult the product's material safety data sheet (MSDS) for specific hazard and handling information before use.

Erapol RN50D 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.