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Erapol RN3050

HIGH PERFORMANCE POLYESTER BASED
POLYURETHANE

TECHNICAL DATASHEET

RN3050 is a polyester based urethane prepolymer capped with isocyanate groups. Finished elastomers are formed by reacting these isocyanate groups with di and multi functional amines or polyols to yield high molecular weight thermosetting polymers.

RN3050 elastomers provide properties generally not available in rubbers, plastics or metals and have improved solvent and oil resistance and better thermal stability than most other "general purpose" rubbers and plastics. Other outstanding properties include high abrasion and tear resistance, excellent load-bearing capacity, toughness and resiliency.

RN3050 is a unique engineering material that 'provides the materials engineer with the building blocks to meet specific requirements for his particular application. Through proper selection of a curative and a careful balancing of the stoichiometric ratio, the engineer can control such qualities as tensile and tear strength, abrasion resistance, oil and solvent resistance, load bearing and resiliency.

Application

Typical applications include soft, solvent resistant printing rolls, metal forming pads, seals, gaskets, impellers, fork lift tyres, castors, wheels, etc.

Product Specification

% NCO	5.1 ± 0.2
Specific Gravity at 25°C	1.2
Viscosity at 80°C (cps)	1300 - 1900
Colour	Clear, light amber



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.

Mixing and Curing Conditions

		RN3050 / MOCA	RN3050 / Isonol 93
Erapol RN3050	(pph)	100	100
MOCA level	(pph)	15.5	-
Isonol 93 level	(pph)	-	10.5
Recommended % Theory		95	95
Erapol Temperature	(°C)	80	80
Curative Temperature	(°C)	120	25
Pot Life	(mins)	2 - 3	25
Demould Time @ 100°C	(hrs)	< 1	5
Post Cure Time @ 100°C	(hrs)	16	16

* Pot life based on a 200g sample, prepolymer at 80°C, MOCA at 100°C

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

Physical Properties

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

		RN3050/MOCA	TEST METHOD
Hardness	(Shore D)	50 ± 5	AS1683.15
Tensile Strength	MPa (psi)	51 (7396)	AS1683.11
100% Modulus	MPa (psi)	12.4 (1798)	AS1683.11
300% Modulus	MPa (psi)	20.7 (3002)	AS1683.11
Angle Tear Strength, Die C	(kN/m)	131	AS1683.12
Elongation	(%)	550	AS1683.11
DIN Abrasion Resistance 10N	(mm ³)	80	AS1683.21
Compression Set / 22 hr @ 70°C	(%)	27	AS1683.13
Cured Specific Gravity	(g/cm ³)	1.28	AS1683.4

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Processing Procedure

1. Heat pre-weighed amounts of **RN3050** 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. When adding Moca to **RN3050**, the Moca must be melted at 120°C and Isonol 93 @ 25°C prior to mixing. Liquid curatives (Ethacure 300) are processed at room temperature and do not require preheating prior to mixing with **RN3050**. After adding curative, mix thoroughly and degas at 1-5 mm for 1 to 2 minutes.
3. Pour mixed system into moulds, preheated to 80°C, that have been coated with release or equivalent.
4. Cure in accordance with above recommendations.
5. Automatic metering and mixing equipment can be used with all the **RN3050** systems.

Use Of Different Curatives

Several other commercially available curatives can be used with RN-3050 polymer. For further details contact Era Polymers Technical Department.