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Erapol RN3038

POLYESTER TDI PREPOLYMERS

TECHNICAL DATASHEET

Erapol RN3038 is a polyester based urethane prepolymer. The finished elastomers are formed by reacting the prepolymer with TDI and multi functional amines or polyols to yield high molecular weight thermosetting polymers.

Application

Erapol RN3038 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.

Erapol RN3038 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. Typical applications include soft, solvent resistant printing rolls, metal forming pads, seals, gaskets, impellers, etc.

Product Specification

| | |
|---------------------------------|--------------------|
| % NCO | 3.2 ± 0.2 |
| Specific Gravity at 25°C | 1.2 |
| Viscosity at 80°C (cps) | 1800 - 2400 |
| 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

| | | RN3038 / MOCA | RN3038 / Isonol 93 |
|-------------------------|--------|---------------|--------------------|
| Erapol RN3038 | (pph) | 100 | 100 |
| MOCA level | (pph) | 9.5 | - |
| Isonol 93 level | (pph) | - | 6.7 |
| Recommended % Theory | | 95 | 95 |
| Erapol Temperature | (°C) | 80 | 80 |
| Curative Temperature | (°C) | 100 | 25 - 30 |
| Pot Life | (mins) | 3 | 45 |
| Demould Time at 100°C | (hrs) | 1 | 5 |
| Post Cure Time at 100°C | (hrs) | 16 | 16 |

Physical Properties

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

| | | RN3038/MOCA | RN3038/Isonol 93 | TEST METHOD |
|---------------------------------|----------------------|-------------|------------------|-------------|
| Hardness | (Shore A) | 85 ± 3 | 52 ± 5 | AS1683.15 |
| Tensile Strength | MPa (psi) | 45.0 (6527) | 25.0 (3626) | AS1683.11 |
| 100% Modulus | MPa (psi) | 5.0 (725) | 1.0 (145) | AS1683.11 |
| 300% Modulus | MPa (psi) | 11.0 (1595) | 2.0 (290) | AS1683.11 |
| Angle Tear Strength, Die C | (kN/m) | 92 | 25 | AS1683.12 |
| Trouser Tear Strength | (kN/m) | 38 | - | AS1683.12 |
| Elongation | (%) | 720 | 540 | AS1683.11 |
| DIN Resilience | (%) | 48 | - | DIN 53512 |
| DIN Abrasion Resistance 10N | (mm ³) | 68 | - | AS1683.21 |
| DIN Abrasion Resistance 5N | (mm ³) | - | - | AS1683.21 |
| Compression Set / 22 hr at 70°C | (%) | 22 | - | AS1683.13 |
| Cured Specific Gravity | (g/cm ³) | 1.25 | 1.23 | AS1683.4 |

Processing Procedure

Erapol RN3038 should be heated to 80-85°C and thoroughly degassed at approximately -95kpa of vacuum until excessive foaming stops.

The Curative should be added to RN3038, the MOCA must first be melted at 110 - 120°C prior to mixing and Ethacure 300 processed at room temperature. After adding the curative, mix thoroughly, being careful not to introduce air into the mixture.

Pour mixed RN3038/MOCA or RN3038/Ethacure 300 into moulds that have been preheated at 80 -100°C and precoated with release agent.

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

Erapol RN3038 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.