



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                   | 4.9 - 5.3          |  |  |
| Viscosity at 80°C (cps) | 1200 - 1800        |  |  |

## **Mixing and Curing Conditions**

|                             |        | RN50D/<br>MOCA | RN50D /<br>Ethacure 300                             | RN50D /<br>Eracure 110 |
|-----------------------------|--------|----------------|---|------------------------|
| Erapol RN50D                | (pph)  | 100            | 100   | 100                    |
| MOCA level                  | (pph)  | 15.4           | 7971711 <del>1</del> 111111111111111111111111111111 | -                      |
| Ethacure 300 level          | (pph)  | ANNAH HIII     | 12.4  | -                      |
| Eracure 110 level           | (pph)  |                | 97777 <u>7</u>                                      | 13.1                   |
| Recommended % Theory        |        | 95             | 95  | 95                     |
| <b>Erapol Temperature</b>   | (°C)   | 80             | 65  | 65                     |
| <b>Curative Temperature</b> | (°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                     |



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- 100°C Ethouse 200 and
- \* 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/      | RN50D/       | RN50D /     | TEST METHOD  |
|------------------------------------|-----------|-------------|--------------|-------------|--------------|
|                                    | 1         | MOCA        | Ethacure 300 | Eracure 110 | TEST WILTHOD |
| Hardness (S                        | shore D)  | 50 ± 3      | 45 ± 3       | 45 ± 3      | AS1683.15    |
| Tensile Strength M                 | IPa (psi) | 54.1 (7846) | 50.7 (7353)  | 49.4 (7164) | AS1683.11    |
| 100% Modulus M                     | Pa (psi)  | 9.2 (1334)  | 8.4 (1218)   | 8.6 (1247)  | AS1683.11    |
| 300% Modulus M                     | Pa (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    |
| <b>DIN Abrasion Resistance 10N</b> | (mm³)     | 70          | -            | -           | AS1683.21    |
| DIN Abrasion Resistance 5N         | (mm³)     | 33          | - //         | -           | AS1683.21    |
| Compression Set / 22 hr at 70°     | °C (%)    | 30          | - IIIA       | -           | AS1683.13    |
| <b>Cured Specific Gravity</b>      | (g/cm³)   | 1.28        | 1.27         | 1.27        | AS1683.4     |

## **Processing Procedure**

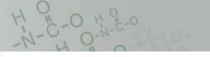
- 1. Heat pre-weighed amounts of **Erapol RN50D** to 80-100°C and degas at -95Kpa of vacuum for at least 5 minutes or until excessive bubbling stops. Containers should be unlined metal, plastic or glass and should be large enough to allow for foaming during degassing.
- 2. MOCA must be melted at 120°C 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.



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