



HIGH PERFORMANCE POLYCAPROLACTONE

BASED POLYURETHANE ELASTOMER

#### **TECHNICAL DATASHEET**

This innovative product is based on a high molecular weight Polycaprolactone polyol. This polyol gives excellent mechanical properties, similar to that of polyester prepolymers, with the added advantage of superior hydrolysis resistance.

**Erapol ECP61A** can be cured with different curatives to produce elastomers with a range of hardness between 56A and 65A without the use of reactive or non-reactive plasticizers.

Polymers made from **Erapol ECP61A** exhibit outstanding abrasion resistance, high load bearing capability, low heat build-up and excellent low temperature flexibility.

### **Application**

Typical uses for this polymer include forklift and caster wheels, screens, cyclones etc.

### **Product Specification**

|                          | ECP61A              | Eracure 105F       | Eracure 106       |
|--------------------------|---------------------|--------------------|-------------------|
| % NCO                    | 3.75 ± 0.20         | MAA - 1111 No.     | -                 |
| Equivalent Weight        | -////////           | 113                | 110               |
| Specific Gravity at 77°F | 1.15                | 1.20               | 1.16              |
| Viscosity (cps)          | 1200 – 1800 (176°F) | 1500 - 2500 (77°F) | 900 - 1500 (77°F) |
| Appearance               | Clear, light amber  | Opaque tan liquid  | Opaque tan liquid |

## **Processing Procedure**

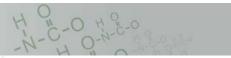
- 1. **Erapol ECP61A** should be heated to 176-185°F (80-85°C) and thoroughly degassed at 95kpa of vacuum until excessive foaming stops. **Eracure 105** and **Eracure 106** will need to be mechanically stirred for a minimum of 20 30 minutes before removing material.
- 2. The curative should be added to **Erapol ECP61A**. **Eracure 105** and **Eracure 106** are used at ambient temperatures and do not require heating. After adding the curative, mix thoroughly being careful not to introduce air into the mixture.
- Pour mixed Erapol ECP61A /Curative into moulds which have been preheated to 230°F (110°C) and pre-coated with release agent.
- 4. Cure mixed **Erapol ECP61A** at 230°F (110°C) for 16 hours, to produce maximum physical properties.



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.

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# **Mixing and Curing Conditions**

|                             |                   | ECP61A /<br>MOCA         | ECP61A / E105          | ECP61A / E105F         | ECP61A / E106          | ECP61A / E106F         |
|-----------------------------|-------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|
| Erapol ECP61A               | (pph)             | 100                      | 100                    | 100                    | 100                    | 100                    |
| MOCA Level                  | (pph)             | 11.3                     | 75/75/15 <del>4</del>  | -                      | -                      | -                      |
| Eracure 105 level           | (pph)             | - ///                    | 9.4                    | 9.6                    | -                      | -                      |
| Eracure 106 level           | (pph)             | - ////                   | 777779                 | -                      | 9.4                    | 9.4                    |
| DABCO 33LV                  | (pph)             | - ////                   | <i>[[[]]]</i>          | 0.25                   | -                      | 0.24                   |
| Recommended % Theory        |                   | 95                       | 95                     | 95                     | 95                     | 95                     |
| ECP61A Temperature          | °F (°C)           | 176 - 185<br>(80 – 85)   | 176 - 185<br>(80 – 85) | 176 - 185<br>(80 – 85) | 176 – 185<br>(80 – 85) | 176 – 185<br>(80 – 85) |
| Curative Temperature        | °F (°C)           | 230 – 248<br>(110 – 120) | 68 – 86<br>(20 – 30)   |
| Pot Life                    | (mins)            | 19                       | 10 - 20                | 6 - 7                  | 15 - 25                | 7 - 8                  |
| Demould Time at 230°F (110  | )°C) (mins)       | 120                      | 50                     | 20 - 30                | 60                     | 20 - 30                |
| Post Cure Time at 230°F (11 | <b>0°C)</b> (hrs) | 16                       | 16                     | 16                     | 16                     | 16                     |

# **Physical Properties**

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

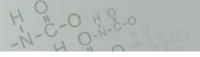
|                                    |                               | ECP61A / MOCA                                 | ECP61A / E105F | ECP61A / E106 |
|------------------------------------|-------------------------------|---|----------------|---------------|
| Hardness                           | (Shore A)                     | 60  | 60             | 60            |
| Tensile Strength                   | psi (MPa)                     | 5076 (35)                                     | 3481 (24)      | 3089 (21)     |
| 100% Modulus                       | psi (MPa)                     | 464 (3.2)                                     | 363 (2.5)      | 261 (1.8)     |
| 300% Modulus                       | psi (MPa)                     | 1160 (8.0)                                    | 1175 (8.1)     | 841 (5.8)     |
| Elongation                         | (%)                           | 500   | 430            | 495           |
| Angle Tear Strength, Die           | C pli (kN/m)                  | 211 (37)                                      | 180 (31.6)     | 226 (39.5)    |
| Tear Strength D470                 | pli (kN/m)                    | WWW.72  | 36.5 (6.4)     | 31.4 (5.5)    |
| DIN Resilience                     | (%)                           | 32  | 49             | 53            |
| DIN Abrasion Resistance            | <b>10N</b> (mm <sup>3</sup> ) | 71  | 28             | 29            |
| Compression Set /22 hr at 70°C (%) |                               | MATERIA - /////////////////////////////////// | 14             | 14            |
| <b>Cured Specific Gravity</b>      | (g/cm <sup>3</sup> )          | 1.15  | 1.14           | 1.14          |



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## **Handling Precautions**

**Erapol ECP61A** contains small amounts of free TDI. It should be used in well-ventilated areas. Avoid inhaling 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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