



Era Polymers Pty. Ltd.
25-27 Green Street, Banksmeadow
Sydney, NSW 2019
AUSTRALIA
www.erapol.com.au

Erapol ETL94A

POLYETHER (PPG) TDI PREPOLYMER

TECHNICAL DATASHEET

Erapol ETL94A is a liquid isocyanate terminated pre-polymer based on PPG polyol.

Having a PPG backbone means that this pre-polymer is considerably cheaper than polymers made from PTMEG.

Additionally **Erapol ETL94A** can be blended with premium grade compounds to produce formulations of intermediate performance/cost.

Application

Generally used in applications where the outstanding properties of PTMEG based materials are not needed.

Product Specification

| | |
|-------------------------|-------------|
| % NCO | 6.25 ± 0.25 |
| Specific Gravity @ 25°C | 1.02 |
| Viscosity @ 80°C (cps) | 150 - 500 |
| Colour | Amber |

Mixing and Curing Conditions

| | | ETL94A / MOCA | ETL94A / Ethacure 300 | ETL94A / Eracure 110 |
|------------------------|--------|---------------|-----------------------|----------------------|
| Erapol ETL94A | (pph) | 100 | 100 | 100 |
| MOCA Level | (pph) | 19.0 | - | - |
| Ethacure 300 Level | (pph) | - | 15.0 | - |
| Eracure 110 Level | (pph) | - | - | 16.2 |
| Recommended % Theory | | 95 | 95 | 95 |
| Erapol Temperature | (°C) | 75 - 85 | 60 - 70 | 60 - 70 |
| Curative Temperature | (°C) | 100 - 110 | 20 - 30 | 20 - 30 |
| Pot Life | (mins) | 5 | 4 | 4 |
| Demould Time @ 100°C | (hrs) | 1 | 1 | 1 |
| Post Cure Time @ 100°C | (hrs) | 16 | 16 | 16 |

When the temperature of MOCA is between 110 - 120°C, the casting will appear to have MOCA flakes throughout. If a clear MOCA casting is required, then process **ETL94A** at 70°C and MOCA at 90°C



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Physical Properties

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

| | | ETL94A/MOCA | ETL94A/E300* | ETL94A/E110** | TEST METHOD |
|---------------------------------------|----------------------|-------------|--------------|---------------|-------------|
| Hardness | (Shore A) | 95 ± 3 | 95 ± 3 | 95 ± 3 | AS1683.15 |
| Tensile Strength | MPa (psi) | 28.0 (4061) | 23.1 (3350) | 30.0 (4351) | AS1683.11 |
| 100% Modulus | MPa (psi) | 6.2 (899) | 5.2 (754) | 12.6 (1827) | AS1683.11 |
| 200% Modulus | MPa (psi) | - | - | 15.5 (2248) | AS1683.11 |
| 300% Modulus | MPa (psi) | 11.2 (2495) | 14.5 (2103) | 20.4 (2959) | AS1683.11 |
| Angle Tear Strength, Die C | (kN/m) | 90 | 75 | 69 | AS1683.12 |
| Trouser Tear Strength | (kN/m) | - | - | 34 | AS1683.12 |
| Elongation | (%) | 350 | 330 | 480 | AS1683.11 |
| DIN Resilience | (%) | - | - | 40 | DIN53512 |
| DIN Abrasion Resistance 10N | (mm ³) | 145 | - | 65 | AS1683.21 |
| DIN Abrasion Resistance 5N | (mm ³) | 49 | 48 | 33 | AS1683.21 |
| Compression Set / 22 hr @ 70°C | (%) | 50 | 60 | 60 | AS1683.13 |
| Cured Specific Gravity | (g/cm ³) | 1.10 | 1.10 | 1.08 | AS1683.4 |

Please note * Ethacure 300
** Eracure 110

Processing Procedure

- Erapol ETL94A** should be heated to the recommended processing temperature and thoroughly degassed at 1 - 5 mm Hg of vacuum until excessive foaming stops.
- The curative should then be added to the **ETL94A**. MOCA must first be melted at 110 - 120°C prior to mixing and Ethacure 300/Eracure 110 processed at room temperature. After adding the curative, mix thoroughly, being careful not to introduce air into the mixture.
- Pour mixed materials into moulds that have been pre-heated to 80 - 100°C and pre-coated 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 ETL94A contains a small amount 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. Call a physician.

If nose, throat or lungs become irritated from breathing in vapours, remove exposed person to fresh air. Call a physician.