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Erapol EMD96A

HIGH PERFORMANCE MDI BASED ELASTOMER

TECHNICAL DATASHEET

Erapol EMD96A is a high performance hot castable grade, MDI polyurethane elastomer based on PTMEG polyols. This product is an elastomer with outstanding toughness and abrasion properties, which is characteristic of MDI systems. **Erapol EMD96A** is normally cured with 1,4 Butane Diol (BDO) to produce a 96 Shore A elastomer.

Application

This product has been specifically designed for the rebound properties and high hardness for skateboard wheels.

Product Specification

| | EMD96A (A) | 1,4-BDO (B) |
|--------------------------|--------------------------------|--------------|
| % NCO | 9.6 ± 0.25 | - |
| Specific Gravity at 25°C | 1.02 – 1.08 | 1.017 |
| Viscosity at 80°C (cps) | 400 – 1200 | 71.5 |
| Appearance | Milky White translucent liquid | Clear Liquid |

Mixing and Curing Conditions

| | | |
|-------------------------|--------|-----------|
| EMD96A (A) | (pbw) | 100 |
| 1,4-BDO (B) | (pbw) | 9.8 |
| Recommended % Theory | | 95 |
| EMD96A Temperature | (°C) | 70 – 80 |
| 1,4-BDO Temperature | (°C) | 25 – 30 |
| Mixing Time | (mins) | 1 – 2 |
| Pot Life at 80°C | (mins) | 3 – 4 |
| Mould Temperature | (°C) | 100 - 110 |
| Oven Temperature | (°C) | 100 - 110 |
| Demould Time at 110°C | (mins) | 45 |
| Post Cure Time at 110°C | (hrs) | 16 |



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Physical Properties

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

| | | EMD96A/1,4-BDO | TEST METHOD |
|-------------------------------------|----------------------|----------------|----------------------|
| Hardness | (Shore A) | 96 ± 3 | AS1683.15 |
| Tensile Strength | (MPa) | 36 | AS1683.11 |
| 50% Modulus | (MPa) | 8.1 | AS1683.11 |
| 100% Modulus | (MPa) | 10.1 | AS1683.11 |
| 200% Modulus | (MPa) | 13.7 | AS1683.11 |
| 300% Modulus | (MPa) | 18.4 | AS1683.11 |
| Elongation | (%) | 535 | AS1683.11 |
| Angle Tear Strength, Die C | (kN/m) | 130 | AS1683.12 |
| Trouser Tear Strength | (kN/m) | 40 | AS1683.12 |
| DIN Resilience | (%) | 56 | DIN 53512 |
| DIN Abrasion Resistance 10N | (mm ³) | 40 | AS1683.21 |
| DIN Abrasion Resistance 5N | (mm ³) | 20 | AS1683.21 |
| Cured Specific Gravity | (g/cm ³) | 1.1 | AS1683.4 |
| Compressive Stress, 10% deformation | (MPa) | 4 | AS2498.3 / ASTM D575 |

Erapol EMD96A can be mixed by hand and can be machine dispensed also.

NOTE: Both Part A and Part B components are moisture sensitive. Once opened, containers should be purged with nitrogen, if they are to be stored for a period of time.

Below 15°C Part A will appear as a white wax like substance. The Part A can be melted overnight by placing the drum or pail in a fan forced hot box at 70-80°C. Care should be exercised in keeping moisture away from the part A. Do not exceed a temperature of 80°C when melting out the Part A.

Processing Procedure

1. Carefully weigh the correct amount of **part A** into a container and heat to 70-80°C and thoroughly degas under vacuum at -95 KPa.
2. Carefully weight correct proportion of the **1,4 Butane Diol** into **part A** and, mix thoroughly. Be careful not to entrap air whilst mixing. (If there are a lot of bubbles in the sample at this stage, the mixed material can be degassed again.)
3. Pour the mixed materials into moulds that have been preheated to 110°C and pre-coated with release agent, being careful to avoid trapping air.
4. Allow casting to cure before demoulding.

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 EMD96A should be used in well-ventilated area. Avoid breathing in vapours and protect skin and eyes from contact.

In case of skin contact 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.