Adiprene® BLM 500

Polyurethane (Polyether, MDI)

Chemtura

Message:

ADIPRENE BLM 500 is an MDI based urethane prepolymer with blocked isocyanate curing sites, which can be activated by heating. The blocked curing sites allow protracted storage of the polymer in the presence of moisture and active vulcanizing agents. Diamine-cured ADIPRENE BLM 500 yields vulcanizates having improved performance over common TDI based urethane materials.

ADIPRENE BLM 500 is a novel blocked system based on low free isocyanate technology. With Chemtura's unique process, the residual MDI in the unblocked preoplymer is below 0.5%. The resulting blocked preoplymer has very good processing characteristics, such as low viscosity and melting point. Moreover, the widely used curative for conventional MDI prepolymer is 1,4 butanediol (BDO). Amine cured MDI polyurethanes are preferred for many demanding applications, expecially those requiring toughness and modulus retention at high temperature. Thus, blocked MDI prepolymers open to the opportunity to use amine curatives, for end-use properties not achieved by conventional MDI urethanes.

Materials made from ADIPRENE BLM 500 have high tensile strength and high elongation, and especially have excellent tear strength. They are also low in viscous damping indicating low heat generation and more durability in dynamic applications. ADIPRENE BLM 500 is well suited as a vehicle for abrasion resistant coatings for fabric and rubber, and for solvent-resistant adhesives.

| General Information | | | |
|--------------------------|-----------------------|-------|-------------|
| Features | Durable | | |
| | Good Tear Strength | | |
| | Good Toughness | | |
| | Heat Cure | | |
| | High Elongation | | |
| | High Tensile Strength | | |
| | Low Viscosity | | |
| | | | |
| Uses | Adhesives | | |
| | Coating Applications | | |
| | Fabric Coatings | | |
| | | | |
| Appearance | Amber | | |
| Forms | Liquid | | |
| Physical | Nominal Value | Unit | Test Method |
| Specific Gravity | | | ASTM D792 |
| 1 | 1.07 | g/cm³ | |
| ² | 1.08 | g/cm³ | |
| Hardness | Nominal Value | Unit | Test Method |
| Durometer Hardness | | | ASTM D2240 |
| Shore A ³ | 97 | | |
| Shore A ⁴ | 95 | | |
| Elastomers | Nominal Value | Unit | Test Method |
| Tensile Stress | | | ASTM D412 |
| 100% Strain ⁵ | 14.5 | MPa | |
| 100% Strain ⁶ | 15.2 | MPa | |

| 300% Strain ⁷ | 16.5 | MPa | |
|-----------------------------|---------------|------|-----------|
| 300% Strain ⁸ | 26.2 | MPa | |
| Tensile Strength | | | ASTM D412 |
| 9 | 29.3 | MPa | |
| 10 | 43.8 | MPa | |
| Tensile Elongation | | | ASTM D412 |
| Break ¹¹ | 600 | % | |
| Break ¹² | 410 | % | |
| Tear Strength | | | ASTM D470 |
| Split ¹³ | 25 | kN/m | |
| Split ¹⁴ | 37 | kN/m | |
| Fill Analysis | Nominal Value | Unit | |
| Brookfield Viscosity (50°C) | 12.0 to 35.0 | Pa·s | |
| Isocyanate Content | | | |
| Blocked | 4.2 to 4.6 | % | |
| Free | < 0.20 | % | |
| NOTE | | | |
| 1. | 40°C | | |
| 2. | 25°C | | |
| 3. | MDA | | |
| 4. | MDEA | | |
| 5. | MDA | | |
| 6. | MDEA | | |
| 7. | MDA | | |
| 8. | MDEA | | |
| 9. | MDA | | |
| 10. | MDEA | | |
| 11. | MDA | | |
| 12. | MDEA | | |
| 13. | MDEA | | |
| 14. | MDA | | |

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