



# Texin DP7-1049

Polyether-based TPU grades / Shore hardness D 45 - 70

Developmental product<br>Aromatic polyether-based thermoplastic polyurethane with a Shore hardness of approximately 45D. It can be processed by injection molding, extrusion, or blow molding.

## ISO Shortname

| Property                                       | Test Condition                                    | Unit               | Standard     | Value |
|------------------------------------------------|---------------------------------------------------|--------------------|--------------|-------|
| <b>Rheological properties</b>                  |                                                   |                    |              |       |
| Mold shrinkage, flow/cross to flow             | Value range based on general practical experience | in/in              | ASTM D 955   | 0.008 |
| <b>Mechanical properties (23 °C/50 % r.h.)</b> |                                                   |                    |              |       |
| Flexural modulus                               | 73 °F                                             | lb/in <sup>2</sup> | ASTM D 790   | 15000 |
| Flexural modulus                               | 158 °F                                            | lb/in <sup>2</sup> | ASTM D 790   | 5000  |
| Tensile strength                               |                                                   | lb/in <sup>2</sup> | ASTM D 412   | 6000  |
| Ultimate elongation                            |                                                   | %                  | ASTM D 412   | 400   |
| Tensile stress at 50 % elongation              |                                                   | lb/in <sup>2</sup> | ASTM D 412   | 1400  |
| Tensile stress at 100 % elongation             |                                                   | lb/in <sup>2</sup> | ASTM D 412   | 1600  |
| Tensile stress at 300 % elongation             |                                                   | lb/in <sup>2</sup> | ASTM D 412   | 3500  |
| Compression set, as molded                     | 22 h at 73 °F                                     | %                  | ASTM D 395-B | 22    |
| Compression set, as molded                     | 22 h at 158 °F                                    | %                  | ASTM D 395-B | 75    |
| Compression set, post-cured                    | 22 h at 73 °F; post-cured 16 h at 230 °F          | %                  | ASTM D 395-B | 20    |
| Compression set, post-cured                    | 22 h at 158 °F; post-cured 16 h at 230 °F         | %                  | ASTM D 395-B | 40    |
| Compressive load                               | 2% deflection                                     | lb/in <sup>2</sup> | ASTM D 575   | 130   |
| Compressive load                               | 5% deflection                                     | lb/in <sup>2</sup> | ASTM D 575   | 305   |
| Compressive load                               | 10% deflection                                    | lb/in <sup>2</sup> | ASTM D 575   | 550   |
| Compressive load                               | 15% deflection                                    | lb/in <sup>2</sup> | ASTM D 575   | 775   |
| Compressive load                               | 20% deflection                                    | lb/in <sup>2</sup> | ASTM D 575   | 1000  |
| Compressive load                               | 25% deflection                                    | lb/in <sup>2</sup> | ASTM D 575   | 1215  |
| Compressive load                               | 50% deflection                                    | lb/in <sup>2</sup> | ASTM D 575   | 3125  |
| Tear strength, Die C                           |                                                   | lbf/in             | ASTM D 624   | 725   |
| <b>Thermal properties</b>                      |                                                   |                    |              |       |
| Glass transition temperature                   | DMA=Dynamic Mechanical Analysis                   | °F                 | DMA          | -40   |
| Low-temperature brittle point                  |                                                   | °F                 | ASTM D 746   | < -90 |
| Vicat softening temperature                    | Rate A; 1 kg; 50 °C/h                             | °F                 | ASTM D 1525  | 240   |
| <b>Other properties (23 °C)</b>                |                                                   |                    |              |       |
| Specific gravity                               |                                                   | -                  | ASTM D 792   | 1.14  |
| Shore hardness                                 |                                                   | D Scale            | ASTM D 2240  | 45    |
| Taber abrasion                                 | H-18 wheel; 1,000-g; 1,000 cycles                 | mg Loss            | ASTM D 3489  | 60    |
| Bayshore resilience                            |                                                   | %                  | ASTM D 2632  | 35    |