

NA Product Selection Guide



TPU FOR SPECIALTY MOLDED PARTS

Lubrizol

Engineered Polymers

TPU (THERMOPLASTIC POLYURETHANE)

FOR SPECIALTY MOLDED PARTS

NA Product Selection Guide

| Grades | TPU Polyol Type | Hardness (Shore A/D) ISO 868 | Key benefits | Tensile Strength (MPa) | Elongation at break (%) | Tensile Strength (MPa) | Elongation at Break (%) | Taber Abrasion (mg) | MFI (g/10 min.) ISO 1133 | MFI Conditions | Main Applications |
|----------------------------|----------------------|------------------------------|---|------------------------|-------------------------|------------------------|-------------------------|---------------------|--------------------------|----------------|--|
| ESTANE® ECO 12T95 | Bio TPU™ by Lubrizol | 95A | Bio-based** / Excellent mechanical properties / Abrasion & hydrolysis resistance | 36 (A) | 415 (A) | - | 142 | - | 40-80 | 220°C/8.8 Kg | Electronics and sports & recreation |
| ESTANE® 58280 NAT 065 | Polyether | 79A | High hydrolysis resistance / Good compression set / Good hysteresis | 29 (A) | 720 (A) | 24.9 (C) | 750 | 45 (E) | 20-38 | 210°C/3.8 Kg | Seals |
| ESTANE® 58315 NAT 055 | Polyether | 85A | UV stabilized | 46 (A) | 570 (A) | 48.3 (C) | 570 | 37 (E) | 10-24 | 190°C/8.7 Kg | Outdoor applications |
| ESTANE® 58300 NAT 055 | Polyether | 82A | FDA approved & UV stabilized | 32 (A) | 670 (A) | 37.9 (C) | 650 | 22 (E) | 30-50 | 190°C/8.7 Kg | Outdoor applications |
| ESTANE® 58887 NAT 055 | Polyether | 89A | FDA approved & UV stabilized | 47 (A) | 570 (A) | 51.7 (C) | 500 | 40 (E) | 25-35 | 210°C/3.8 Kg | Outdoor applications and sports goods |
| ESTANE® 58219 NAT 055 | Polyether | 91A | Very good cycle time | 49 (A) | 500 (A) | 62.1 (C) | 470 | 40 (E) | 14-20 | 210°C/3.8 Kg | Technical parts |
| ESTANE® ETE 50DT3 NAT 065 | Polyether | 50D | Low temperature flexibility, high transparency, UV stability | 60 | 420 | 60.0 (C) | 420 | 81 (E) | 2-8 | 210°C/3.8 Kg | Outdoor applications, sports & recreation |
| ESTANE® ETE 55DT3 NAT 065 | Polyether | 55D | High hydrolysis resistance and slow crystallization | 42 (A) | 470 (A) | 57.9 (C) | 420 | 109 (E) | 2-8 | 210°C/3.8 Kg | Large molded parts and offshore components |
| ESTANE® ETE 60DT3 NAT 065 | Polyether | 60D | Low temperature flexibility, high transparency, UV stability | 54 | 460 | 53.8 (C) | 460 | 60 (E) | 2-8 | 210°C/3.8 Kg | Outdoor applications |
| ESTANE® ETE 70DT3 NAT 065 | Polyether | 70D | Low temperature flexibility, high transparency, UV stability | 52 | 360 | 52.0 (C) | 360 | 64 (E) | 2-8 | 210°C/3.8 Kg | Technical parts |
| ESTANE® 58212 NAT 025 | Polyether | 93A/42D | Low-temperature flexibility, Hydrolytic stable | 50 (A) | 500 (A) | 55.0 (C) | 400 | 5 (F) | 8-13 | 190°C/8.7 Kg | Connectors |
| PEARLTHANE™ CLEAR 15N70 | Copolymer | 72A | Low hardness / High elasticity / Exc. mechanical properties & hydrolysis resistance | 30 (A) | 710 (A) | - | - | 25 (G) | 24-45 | 210°C/3.8 Kg | Overmolded parts |
| PEARLTHANE™ CLEAR 15N80 | Copolymer | 82A | Transparency and flexibility | 35 (A) | 740 (A) | - | - | 25 (G) | 24-45 | 210°C/3.8 Kg | Elastic components and animal ID tags |
| PEARLTHANE™ CLEAR 15N85 | Copolymer | 86A | Transparency, Hydrolysis resistance and Low-temperature flexibility | 35 (A) | 600 (A) | - | - | 20 (G) | 20-45 | 210°C/3.8 Kg | Aesthetic components in footwear and other shoe components |
| PEARLTHANE™ 15N95UV | Copolymer | 95A/45D | Fast cycling, Hydrolysis resistance and Low-temperature flexibility | 35 (A) | 545 (A) | - | - | 25 (G) | 10-30 | 210°C/3.8 Kg | Outdoor applications and animal ID tags |
| PEARLTHANE™ 11T80 | PCL* | 82A | Soft, Excellent mechanical properties | 40 (A) | 630 (A) | - | - | 20 (G) | 55-90 | 220°C/3.8 Kg | Automotive components |
| PEARLTHANE™ 11T85 | PCL* | 86A | Excellent flow / Fast cycling / Excellent mechanical properties | 40 (A) | 630 (A) | - | - | 25 (G) | 55-90 | 220°C/3.8 Kg | Automotive and technical parts |
| PEARLTHANE™ 11H94 | PCL* | 95A/45D | Strong compression set, temperature resistance | 42 (A) | 515 (A) | - | - | 35 (G) | 15-40 | 220°C/3.8 Kg | Seals and gaskets |
| ESTANE® 58271 NAT 021 | Polyester | 85A | Good physical properties, chemical resistance, adhesive properties | - | - | 51.7 (C) | 540 (C) | 34 (E) | 15-33 | 190°C/8.7 Kg | Technical parts |
| ESTANE® 58277 NAT 065 | Polyester | 93A | Excellent physical properties, good chemical resistance | - | - | 62.1 (C) | 450 (C) | 50 (E) | 15-25 | 190°C/8.7 Kg | Technical parts |
| ESTANE® 58134 NAT 040 | Polyester | 45D | Fast cycle times, broad temperature performance, durability | 40 | 500 | 40.0 (C) | 500 (C) | 62 (F) | 10-100 | 235°C/1.2 Kg | Industrial, reusable storage, compounding |
| ESTANE® 58130 NAT 040 | Polyester | 50D | Fast cycle times, broad temperature performance, durability | 41 | 450 | 41.0 (C) | 450 (C) | 62 (F) | 10-100 | 235°C/1.2 Kg | Technical parts |
| ESTANE® ETE 55DS3 NAT 065 | Polyester | 55D | Wide extrusion proc. window / Melt stability / High transparency / Low-temp. flex. | 39 (A) | 440 (A) | 71.0 (C) | 440 (C) | 58 (E) | 35-50 | 224°C/3.8 Kg | Large molded parts |
| ESTANE® 58142 NAT 035 | Polyester | 60D | Fast cycle times, broad temperature performance, durability | 38 | 430 | 38.0 (C) | 430 (C) | 82 (F) | 15-35 | 235°C/1.2 Kg | Industrial, reusable storage, compounding |
| ESTALOC® 59104 NAT 051 | Polyester | 68D | Glass Fiber Reinforced | - | - | 40.0 (D) | 40 (D) | - | - | - | - |
| ESTALOC® 59300 NAT 051 | Polyester | 75D | 30% Glass Fiber Reinforced, UL yellow card | 78 (B) | 15 (B) | 83.0 (D) | 20 (D) | - | - | - | Casing power tools and metal replacement parts |
| ESTALOC® 59600 NAT 051 | Polyester | 75D | 50% Glass Fiber Reinforced, UL yellow card | 93 (B) | 7 (B) | 96.0 (D) | 13 (D) | - | - | - | Technical parts, high modulus and safety components |
| ESTANE® TS92AP7 NAT 055 | Polycarbonate | 93A | Long term heat stability, Excellent chemical resistance | 60 (B) | 375 (B) | - | - | 28 (G) | 15-30 | 200°C/8.7 Kg | Technical parts and compounds |
| ISOPLAST® 101 NAT 01 | ETP | 80D | Metal replacement and high modulus ETP | 48 | 160 | 48.0 (D) | 160 (D) | - | 4-12 | 224°C/5 Kg | Building & construction; small engine components; transportation |
| ISOPLAST® 202EZ NAT 01 | ETP | 82D | Metal replacement and high modulus ETP | 69 | 90 | 69.0 (D) | 90 (D) | - | 2-12 | 245°C/8.7 Kg | Building & construction; small engine components; transportation |
| ISOPLAST® 301 NAT 01 | ETP | 84D | Metal replacement and high modulus ETP | 69 | 140 | 63.0 (D) | 140 (D) | - | 2-14 | 224°C/8.7 Kg | Building & construction; small engine components; transportation |
| ISOPLAST® 302EZ NAT 01 | ETP | 85D | Metal replacement and high modulus ETP | 83 | 90 | 69.0 (D) | 90 (D) | - | 6-14 | 245°C/8.7 Kg | Building & construction; small engine components; transportation |
| ISOPLAST® 101 LGF40 NAT 01 | ETP | 87D | Structural TPU, 40% long glass fiber reinforced | 186 | 2 | 186.0 (D) | 2 (D) | - | - | - | Automotive, sports & recreation, transportation |
| ISOPLAST® 101 LGF40 BLK 01 | ETP | 87D | Structural TPU, 40% long glass fiber reinforced | 186 | 2 | 186.0 (D) | 2 (D) | - | - | - | Automotive, sports & recreation, winter sports |
| ISOPLAST® 202 LGF40 NAT 01 | ETP | 88D | Structural TPU, 40% long glass fiber reinforced | 186 | 2 | 186.0 (D) | 7 (D) | - | - | - | Automotive, sports & recreation, winter sports |

* PCL = Polycaprolactone Copolyester / ** Bio-based content as certified in accordance with ASTM D6866

(A) ISO 527-2/5A/500 (B) ISO 527-2/1A/5 (C) ASTM D412 (D) ASTM D638

(E) ASTM D3389 (H-18, 1000G, 1000 REV) (F) ASTM D3389 (CS-17, 1000G, 1000 REV) (G) ISO 4649-A

To learn more, visit www.lubrizol.com/Engineered-Polymers



LUBRIZOL GLOBAL PRESENCE

Our global presence means we have the application and development laboratories (with technical service ability) already in place, as well as worldwide production capabilities and renowned customer service. We are also a specialty producer of performance coatings and other unique products for apparel. Teaming with Lubrizol simplifies a complex global supply chain.

AMERICAS

Lubrizol Advanced Materials, Inc.
9911 Brecksville Road
Cleveland, Ohio 44141-3201
USA Phone: +1 216 447 5000

ASIA

Lubrizol Specialty Chemicals
Manufacturing (Shanghai) Co., Ltd.
6F, No.3, Building C,
Lane 227 Dongyu Road
Pudong New District, Shanghai,
PRC 200126
Phone: +86 21 3866 0366

EUROPE, MIDDLE EAST, INDIA & AFRICA

Lubrizol Advanced Materials
Spain S.L. Gran Vial, no. 17
08160 Montmeló (Barcelona)
Spain
Phone: +34 93 579 9522



Lubrizol

Engineered Polymers

THE SELLER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Nothing contained herein is to be considered as permission, recommendation, nor as an inducement to practice any patented invention without permission of the patent owner.

©2024 The Lubrizol Corporation. All rights reserved. All marks are the property of The Lubrizol Corporation. NA-SM-012024



contact us at
go.lubrizol.com/EP