

Polymer Properties Chart

| | GENERAL | | | | | MECHANICAL PROPERTIES | | | | | | | | | THERMAL PROPERTIES | | | | | | | ELECTRICAL PROPERTIES | | | | | |
|----------------------|-------------------|------------------|-------------------|-------------|------------------------------|------------------------------------|---------------------|-------------------------------|----------------------------|-----------------------------|--------------------------------|---------------------------|-------------------|----------------------------------|--------------------|----------------------|--------------------------------|--------------------------------------|------------------------------------|--|-------------------------------|-----------------------|--------------------|-----------------------------|------------|--------------------|-----------------------------|
| | Density | Water Absorption | @ 23°C Saturation | Colour | Suitability for Food Contact | Tensile Strength at yield at break | Elongation at break | Tensile modulus of elasticity | Compression test 1% strain | Impact Strength Charpy 7.5J | Notched impact strength Charpy | Ball Indentation hardness | Rockwell hardness | Coefficient of friction to steel | Melting point | Thermal conductivity | Deformation at temperature HDT | Linear expansion coefficient 23-60°C | Operating Temperature continuously | Operating Temperature short period no load | Operating Temperature minimum | Flammability | Oxygen Index [LOI] | Dielectric Constant at 1MHz | Dielectric | Volume Resistivity | Dissipation factor at 1 MHz |
| Units | g/cm ³ | % | % | — | — | N/mm ² | % | N/mm ² | N/mm ² | — | Kj /mm | N/mm ² | — | — | °C | W/(Km) | °C | — | °C | °C | °C | — | % | — | kV/mm | Ω•cm | — |
| TEST METHOD | ISO | 1183 | 62 | 62 | — | — | 527 | 527 | 527 | 899 | R179 | R179/3C | 2039.1 | 2039.1 | 8295 | 3146 | 22007.2 | 75 | 11359 | | | | 4589 | 250 | 243 | 93 | 250 |
| | ASTM | — | — | — | — | — | | | | | | | | | | | | | | | | D2863 | | | | | |
| | DIN | 53479 | 53715 | 53495 | — | — | 53455 | 53455 | 53455 | 53444 | 53453 | 53453 | 53456 | 53456 | 53375 | | 52612 | 53461 | 53752 | | | UL94 | 22117 | 53483 | 53481 | 53482 | 53483 |
| ACETAL | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acetal POM-C | 1.410 | 0.8 | 0.65 | black white | ✓ | 65 | 28 | 2855 | NA | no break | 6.0 | 125 | M88 | 0.35 | 166 | 0.30 | 95 | 120x10 ⁻⁶ K ⁻¹ | 100 | 140 | -30 | HB | 18 | 3.8 | 40 | 10 15 | 0.005 |
| POLYETHYLENE | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HDPE | 0.955 | 0.00 | 0.02 | black white | ✓ | 30 | 500 | 1100 | 3 | no break | 12.0 | 43 | 63 Shore D | 0.32 | 130 | 0.39 | 45 | 180x10 ⁻⁶ K ⁻¹ | 80 | 90 | -50 | HB | 18 | 2.3 | 45 | 10 15 | 0.0006 |
| UHMWPE | 0.930 | — | 0.02 | black white | ✓ | 40 | — | 760 | 5 | no break | 101.0 | 38 | — | 0.2 | 133 | 0.41 | — | 200x10 ⁻⁶ | 80 | 110 | -180 | HB | 19 | — | 41 | 10 14 | 0.007 |
| UHMWPE ECO | 0.930 | — | 0.02 | black | ✗ | 40 | — | 910 | 6 | no break | 90.0 | 37 | — | .15 -.25 | 141 | 0.41 | — | 200x10 ⁻⁶ | 80 | 110 | -150 | HB | 19 | — | 40 | 10 14 | — |
| NYLON | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nylon PA6 | 1.140 | 6.50 | 9.00 | white | ✓ | 54 | 60 | 1700 | 6 | no break | 25.0 | 80 | M85 | 0.42 | 220 | 0.23 | 83 | 90x10 ⁶ K | 88 | 150 | -40 | HBV2 | 24 | 7 | 25 | 10 12 | 0.06 |
| Nylon PA6G | 1.140 | 2.80 | 9.00 | yellow | ✗ | 50 | 180 | 1 700 | 6 | no break | 26.0 | 81 | M82 | 0.30 | 220 | 0.28 | 90 | 90x10 ⁶ K | 88 | 150 | -40 | HBV3 | 24 | 7 | 25 | 11 12 | 0.06 |
| Nylon PA6MG | 1.140 | 2.80 | 9.00 | black | ✗ | 54 | 180 | 1 700 | 6 | no break | 26.0 | 81 | M85 | 0.30 | 220 | 0.25 | 83 | 90x10 ⁶ K | 88 | 150 | -40 | HBV3 | 24 | 7 | 25 | 11 12 | 0.06 |
| PERFORMANCE PLASTICS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PEEK | 1.310 | 0.40 | 0.40 | beige | ✓ | 67 | 16 | 4400 | — | no break | 3.5 | 250 | 99 | 0.4 | 340 | 0.25 | — | 50x10 ⁻⁶ K ⁻¹ | 250 | 300 | -10 | VO | — | 3.2 | 24 | 10 13 | 0.002 |
| PETP | 1.380 | 0.20 | 0.50 | white | ✓ | 85 | 50 | 3700 | 20 | NA | 5.0 | 170 | M95 | 0.25 | 250 | 0.28 | 95 | 70x10 ⁶ K ⁻¹ | 115 | 170 | -20 | HB | 22 | 3.2 | 60 | 10 16 | 0.01 |
| PTFE | 2.180 | 0.00 | — | white | ✓ | 31 – 45 | — | — | — | — | — | — | M58 | .05 - .1 | 210 | 0.26 | — | 160x10 ⁶ K ⁻¹ | 240 | 290 | -20 | — | — | — | — | 10 17 | 0.003 |