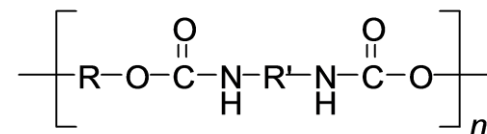


## Thermoplastic Polyurethane (H-PU, TPU)



### SPECIFICATIONS

| Property   | Spec        | Value                    |
|--|-------------|--------------------------|
| Hardness   | ISO 868     | 95A ±2                   |
| Hardness   | ISO 868     | 48D ±3                   |
| Density (g/ cm <sup>3</sup> )                          | ISO 1183    | 1.14                     |
| Tensile Strength (N/ mm <sup>2</sup> )                 | ASTM D-412  | 28.6                     |
| Ultimate Elongation                                    | ASTM D-412  | 425                      |
| 100% Modulus (N/ mm <sup>2</sup> )                     | ASTM D-412  | 10.0                     |
| 300% Modulus (N/ mm <sup>2</sup> )                     | ASTM D-412  | 20.6                     |
| Compression Set 100°C, 24hrs                           | ASTM D-395  | 30%                      |
| Compression Set 70°C, 22hrs                            | ASTM D-395B | 22%                      |
| Minimum Service Temp                                   | ASTM D-7028 | -40°C<br>-40°F           |
| Maximum Service Temp                                   |             | 115°C<br>239°F           |
| <b>Changes after 90 days, 80°C in distilled water:</b> |             |                          |
| Tensile Strength                                       |             | ≤50% reduction           |
| Tensile 100% Modulus                                   |             | ≤50% reduction           |
| Tensile Elongation                                     |             | ≤50% reduction           |
| Hardness   |             | ≤10 pts or 10% reduction |
| Volume Swell   |             | ≤±5% volumetric changes  |
| Color  |             | Blue                     |

### DESCRIPTION

MP169 is a H-PU, TPU material with hardness 95±2 Shore A and 48±3D, specially compounded for use in high pressure hydraulic seals. The polyurethane polymer industry has enormous categories of products for a wide variety of applications. Polyurethane used in the seal industry is a thermoplastic elastomer (TPU). As the name suggests, it behaves like an elastomer but the chemistry is of a thermoplastic. The elasticity of a TPU is brought about through polymer morphology phase changes as in thermoplastics not through vulcanization as seen in other elastomers. Because of its thermoplastic nature, TPU has excellent tensile strength and abrasion resistance that other elastomers are unable to match. Meanwhile, TPUs also have good flexibility and shock absorbing performance. An additional advantage of TPUs is that they can be molded using conventional thermoplastic processes.