Filled UHMW Polyethylene (UP40)

Material Data Sheet
M-5 (Rev. 02; 11-5-20)
Overview

UP40 is an ultra-high molecular weight (UHMW) polyethylene-based material similar to UP30, but made from a higher molecular weight polyethylene. It is designed for high-performance liquid chromatography (HPLC) pumps, and offers excellent sealing performance in reciprocating applications from –450 °F to 180 °F (–268 °C to 82 °C).

Chemical Compatibility

UP40 is compatible with acids and bases. This material is compatible with most fluids. For more compatibility information, request report TR-60A, or go to www.balseal.com/technical-library. Select Technical Reports, then select TR-60A Chemical Compatibility Guide.

FDA Compliance

UP40 is FDA compatible for use in food contact. Bal Seal Engineering defines “FDA compatible” as compositions where the majority (97% or more) of the ingredients have received an FDA “safe for use in food contact” and contain no ingredients listed in the California Code of Regulations Hazardous Substance List.

Color

Gold

Heat Treatment

Certain seal sizes are supplied as UP40 HT. The “HT” denotes our use of a heat treatment process to limit dimensional changes. Material properties and composition remain the same.
Mechanical Properties of UP40

<table>
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<tr>
<th>Tensile Strength (typical)</th>
<th>Elongation (typical)</th>
<th>Hardness</th>
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<td>6400 psi (441 bar)</td>
<td>320%</td>
<td>63 ShoreD (47 Rc)</td>
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Advantages of UP40

- Suitable for medium pressure reciprocating and rotary applications
- High chemical resistance
- High wear and pressure/extrusion resistance
- Temperature range of –450 °F to 180 °F

For more information, contact a technical sales representative, or e-mail us at solutions@balseal.com.