



# Filled UHMW Polyethylene (UP40)

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

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## 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](http://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

Tensile Strength (typical)	Elongation (typical)	Hardness
6400 psi (441 bar)	320%	63 ShoreD (47 Rc)

## 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](mailto:solutions@balseal.com).

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