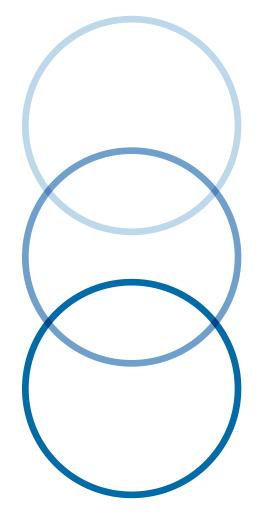


Custom components that drive tomorrow's technologies.®



# Medical-Grade UHMW Polyethylene (UPC16)

Material Data Sheet M-3 (Rev. 01; 06-01-21)

19650 Pauling Foothill Ranch, CA USA 92610-2610 0 +1 949 460 2100 F +1 949 460 2300 VIDA Building, 1st floor Kabelweg 57 1014 BA Amsterdam The Netherlands 0 +31 20 638 6523 F +31 20 625 6018 Suite 901, Chinachem Century Tower 178 Gloucester Road, Wanchai, Hong Kong 0 +852 28681860 F +852 22956753

www.balseal.com















#### Overview

UPC16 is an ultra-high molecular weight (UHMW) polyethylene-based material. It is manufactured through an extrusion process in a clean room environment for purity, and it is suitable for use in non-implantable medical, as well as pharmaceutical and food contact sealing applications.

UPC16 has excellent wear resistance in water and other aqueous media. It is recommended for use in temperatures ranging from -450 °F to +180 °F (-268 °C to +82 °C).

## Chemical Compatibility

UPC16 exhibits excellent compatibility with most fluids and gases, including ketones, alcohols, amines, and esters. It has limited applications with oxidizing acids and chlorinated solvents. For more details, reference Technical Report 60A, "Chemical Compatibility Guide," in the technical library section of our website at www.balseal.com.

UPC16 can be repeatedly sterilized with standard ethylene oxide (EtO) methods without loss of biocompatibility or degradation of mechanical properties.

# Compliance

UPC16 is a pre-qualified material for medical and pharmaceutical applications. It has been tested and verified by an accredited independent authority to meet ISO 10993-5 (cytotoxicity) requirements.

UPC16 is FDA compliant. Bal Seal Engineering identifies its compositions as "FDA compliant" if ingredients in the composition meet requirements of FDA regulation 21 CFR 170.39, and are determined by the FDA to be "safe for use in food contact," or "acceptable for use in food contact."

#### Color

White (color variations may occur during processing).







## **Heat Treatment**

Certain seal sizes are supplied as UPC16 HT where HT stands for a heat treatment to limit dimensional changes. Material properties and composition remain the same.

## Mechanical Properties of UPC16

| Tensile Strength | Elongation | Hardness          |
|------------------|------------|-------------------|
| (typical)        | (typical)  | (typical)         |
| 5000 psi         | 300%       | 62 ShoreD (46 Rc) |

## **Applications**

- Pharmaceutical dispensing and packaging equipment
- Food mixers and blenders
- Food processing equipment handling powders and slurries
- Surgical instruments
- Recirculating laboratory pumps

## Other Information

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

The information, descriptions, recommendations and opinions set forth herein are offered solely for your consideration, inquiry, and verification and are not, in part or in whole, to be construed as constituting a warranty, expressed or implied, nor shall they form or be a part of the basis of any bargain with Bal Seal Engineering, If any sample or model was shown to or provided by Buyer/ User, such sample or model was used merely to illustrate the general description and type of goods. Such use is not to be construed as a warranty that the goods will conform to the sample or model. Furthermore, THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ALL OTHER WARRANTIES, IMPLIED OR EXPRESSED, ARE EXCLUDED AND SHALL NOT APPLY. This document provides product options for further investigation by Buyers/Users having technical expertise. The Buyer/User, through its own analysis and testing, is solely responsible for making the final selection of the products and for assuming that all performance, safety and warning requirements for the application are met. It is recommended that Buyers/Users run evaluation testing under actual service conditions to determine whether proposed Bal Seal Engineering products are suitable for the intended purpose. Nothing contained herein or in any of our literature shall be considered a license or recommendation for any use that may infringe patent rights. (LE-17)

© 2021 Bal Seal Engineering, LLC







