



Medical-Grade UHMW Polyethylene (UPC16)

Material Data Sheet
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19650 Pauling
Foothill Ranch, CA
USA 92610-2610
O +1 949 460 2100
F +1 949 460 2300

Jollemanhof 16, 5th floor
1019 GW Amsterdam
The Netherlands
O +31 20 638 6523
F +31 20 625 6018

Suite 901, Chinachem
Century Tower
178 Gloucester Road,
Wanchai, Hong Kong
O +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 (typical)	Elongation (typical)	Hardness (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

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