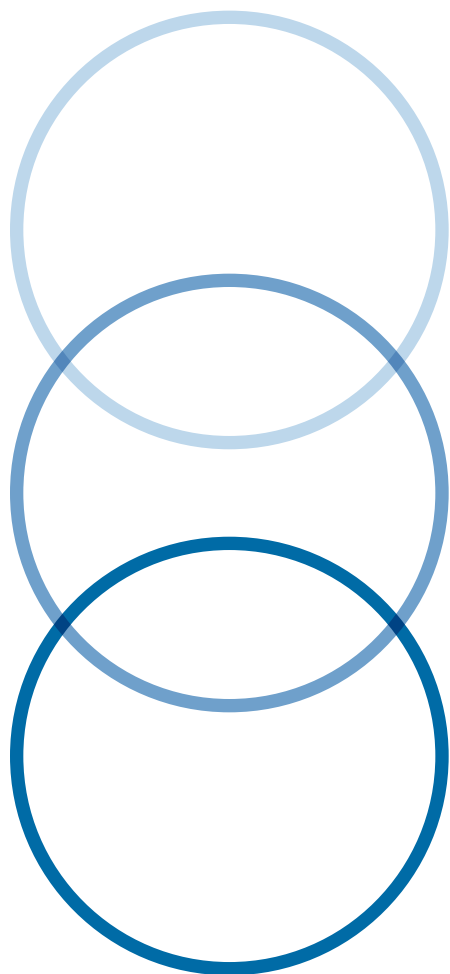




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Polymer-Filled Polytetrafluoroethylene (SP400HT)

Material Data Sheet
M-75 (Rev. 02, 09-03-26)

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Overview

SP400HT is a polymer-filled Polytetrafluoroethylene (PTFE) formulated for use in high-performance seals and bearings. It performs well in both static and dynamic service. Characteristics of this material include:

- Extremely low friction (0.10 – 0.20)
- Excellent abrasion and wear resistance in dry and liquid environments
- Compatibility with relatively soft mating surfaces (minimum shaft hardness of 25 HRC)
- Very low gas permeability
- Exceptional dimensional stability

As a jacket material, SP400HT effectively seals against a wide range of liquids and gases, in temperatures ranging from –450 °F to +450 °F (–268 °C to +233 °C).

Chemical Compatibility

SP400HT exhibits excellent chemical compatibility. This material is suitable for contact with most fluids and gases, but it is not recommended for use with sulfuric and nitric acids, alkali metals, chlorine, fluorine, lithium, potassium, and sodium at high temperatures. For more details, reference Bal Seal Technical Report TR-60A, *Chemical Compatibility Guide*, in the technical library section of our website at www.balseal.com.

Compliance

SP400HT is a pre-qualified material for medical, pharmaceutical, and implantable applications per Bal Seal Engineering. Bal Seal Engineering defines a medical, pharmaceutical, and implantable material as a composition that meets ISO 10993-5 (cytotoxicity) and USP Class VI requirements as tested by a qualified third party. SP400HT is a composition which contains ingredients that meet FDA regulation for use in food contact applications. Bal Seal Engineering defines its compositions as “FDA Compliant” if each of the ingredients in the composition have been found by the FDA to be “safe for use in food contact,” or “acceptable for use in food contact.”

Mechanical Properties

Typical Mechanical Properties of SP400HT at Ambient Temperatures

Property	Standard	Measure
Tensile Strength	ASTM D4894	2300 psi (16 MPa)
Elongation	ASTM D4894	300%
Hardness	ASTM D2240	55–65 ShoreD

Color

Light tan.

Typical Applications

- Industrial Robots**
 Ideal for start/stop applications where stick-slip must be eliminated, SP400HT promotes consistent and accurate movement. The material's low wear and high heat dissipation capabilities contribute to an exceptionally long seal service life.
- Rotary and Reciprocating Seals**
 Ideal for dynamic sealing on soft shafts (i.e., aluminum, brass, plastic). Used in pumps, compressors, and hydraulic cylinders.
- Food & Pharmaceutical Processing Devices**
 SP400HT delivers excellent performance in high-speed, low-load applications, and it meets FDA requirements.

Other Resources

For more information, contact a technical sales representative, visit our website at www.balseal.com, or e-mail us at sales@balseal.com.

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