

High Premium Polytetrafluoroethylene (TA)

TA (PTFE) has low permeability, superior mechanical properties, and a good surface finish, which reduces shedding material particles and potential entrapment of microscopic particles. **TA** has good elongation and creep resistance, and provides excellent sealing ability in gas and vacuum applications.

Suitable for semiconductor applications, **TA** is recommended for applications requiring low friction, lower surface tension, less porosity, and higher extrusion resistance. Operating temperatures of **TA** range from 450 °F to +450 °F (-268 °C to +232 °C).

Chemical Compatibility

TA has excellent chemical compatibility. The material is compatible with all fluids except fluorinated fluids and alkali metals. (For more compatibility information, request report TR-60A, or go to <http://www.balseal.com/techlib>. Select **Technical Reports (Login Required)**, then select **TR-60A Chemical Compatibility Guide**)

FDA Compliance

TA is an "FDA compliant" resin for use in food contact. (Request Research Report 50-640 for Bal Seal's definition of FDA compliant).

Mechanical Properties

The mechanical properties of **TA** at ambient temperatures are:

Tensile strength	ASTM D638	4500 psi (316.4 kg/cm ²)
Elongation	ASTM D638	450%

The following chart shows the wear rate of **TA** when it comes in contact with different media at various speeds and pressures.

"K" Wear Factor In ³ -min./ft-lb-hr x 10 ⁻¹⁰ ("K" Cm ³ -min./Kg-m-hr x 10 ⁻⁷)				
AIR	WATER		OIL	
Wear Rate at 50,000 P.V.	Wear Rate at 100,000 P.V.		Wear Rate at 100,000 P.V.	
Speed (75 FPM) – pressure (667 PSI)	Speed (100 FPM) – pressure (1000 PSI)	Speed (1000 FPM) pressure (100 PSI)	Speed (100 FPM) – pressure (1000 PSI)	Speed (1000 FPM) – pressure (100 PSI)
Testing in Process	Testing in Process	Not Suitable	Testing in Process	Not Suitable

Color

White

Cost

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Advantages of TA

- Low permeability
- High extrusion and creep resistance
- Good sealing in vacuum and low viscosity gas applications
- Good surface finishes
- Superior mechanical properties

Other Information

For additional information, please contact our Technical Sales Representative at (949) 460-2100. Bal Seal maintains a vast library of material references and testing information.

It is essential that the customer run evaluation testing under actual service conditions with a sufficient safety factor to determine if the proposed, supplied, or purchased, Bal Seal Engineering products are suitable for the intended purpose and to confirm expected results. Bal Seal Engineering makes no warranty, express or implied, regarding Bal Seal Engineering products or of the information contained herein, including but not limited to, warranties of merchantability, performance, and fitness for a particular use or purpose. Bal Seal Engineering shall not be liable for any loss or damage of any kind or nature that may result from the use of, reference to, or reliance on, the information contained herein, including, but not limited to, consequential, special (including loss of profits) direct, indirect, incidental, or similar damages, even if Bal Seal Engineering has been advised of the possibility of such damages. © 2010 RT-48 (50-322); M7 Rev. C (623-6 and 623-64) 04-13-10