



## Polymer-Filled Polytetrafluoroethylene (SP45)

Material Data Sheet  
M-15 (Rev. 01, 03-14-23)

19650 Pauling  
Foothill Ranch, CA  
USA 92610-2610  
O +1 949 460 2100  
F +1 949 460 230

VIDA Building, 1st Floor  
Kabelweg 57  
1014 BA 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](http://www.balseal.com)



## Overview

SP45 is a general-purpose material formulated for contact with shafts and housings that are made from 300 series stainless steel, aluminum, and other soft metallic or plastic materials. SP45 material has low abrasion resistance to mating parts. The material's high PV (pressure-velocity) limits make it suitable for sealing most media, including various liquids and gases, at high speeds and low to moderate pressures. SP45 is recommended for general service applications at temperatures from -450 to +500 °F (-268 to +260 °C). It may be used in food contact applications.

## Chemical Compatibility

SP45 has excellent chemical compatibility. This material is compatible 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 compatibility information, request report TR-60A, or go to [www.balseal.com/technical-library/technical-reports](http://www.balseal.com/technical-library/technical-reports).)

## FDA Compatible

SP45 is "FDA compatible" for use in food contact. Bal Seal Engineering defines "FDA compatible" as compositions in which the majority (97% or more) of the ingredients are designated by the FDA as "safe for use in food contact," and which contain no ingredient listed in the California Code of Regulations Hazardous Substance List (<https://www.dir.ca.gov/title8/339.html>).

## Color

Light green.

## Mechanical Properties of SP45

Typical mechanical properties of SP45 at ambient temperatures:

| Tensile Strength<br>(ASTM D638)     | Elongation<br>(ASTM D638) |
|-------------------------------------|---------------------------|
| 3,000 psi (211 kg/cm <sup>2</sup> ) | 315%                      |

## Advantages of SP45

(For comparative material data, please refer to technical report TR-8A, "Properties of Bal Seal® Polymer Materials")

- Low abrasion to soft materials
- High PV operating limits in most liquid and air applications
- Material maintains its properties at high speeds

## Other Information

For additional information, please contact a technical sales representative at one of our offices nearest you. Bal Seal Engineering maintains a vast library of material references and testing information.

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, Inc.. 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)