

PROPERTIES OF BAL SEAL ENGINEERING SEAL MATERIALS IN RADIATION

Technical Report
TR-19 (Rev. E; 11-27-02)
(100-72-1)



19650 Pauling
Foothill Ranch, CA 92610-2610
Tel (949) 460-2100
Fax (949) 460-2300
Email: sales@balseal.com
www.balseal.com

Bal Seal Engineering Europe B.V.
VIDA Building, 1st Floor
Kabelweg 57
1014 BA Amsterdam
The Netherlands
Tel +31 20 638 6523
Fax +31 20 625 6018
Email: ordersbv@balseal.nl

BAL™ Seal Material	Radiation Level	Maximum Operating Temperatures	Hardness	Tensile Strength at 70°F	Elongation (%)
				PSI (kg/cm ²)	
Fluoropolymer (FP)	2 X 10 ⁸ rad	280°F (138°C)	Shore D-75	3,650 (257)	300
Polyethylene (UP)	9 X 10 ⁷ rad	250°F 121°C)	Shore D-61	7,400 (520)	330
PTFE (Not suitable for radiation service. See note below.)	5 X 10 ⁴ rad	550°F (288°C)	Shore D-60	4,350 (305)	350

Note: PTFE in a nuclear environment degrades very rapidly. Its starting tensile strength of 4,350 psi drops to 2,175 psi when subjected to a radiation of 1 X 10⁶ rads.

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 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)

PATENTS: The items described in this report include products that are the subject of the following issued United States patents: 5,979,904; 5,994,856; 6,050,572; 5,984,316; 6,161,838 and others, as well as foreign patents or products where patents are pending. (LE-88G)

©Copyright 2002, Bal Seal Engineering, U.S.A.

Use or disclosure of data contained on this sheet is subject to the restrictions contained in the disclaimer located in the Table of Contents of this report.

Bal Seal Engineering • Foothill Ranch, CA USA 92610-2610 • Tel: 949 460-2100; Fax: 949 460-2300 • Email: sales@balseal.com • Web: www.balseal.com
Bal Seal Engineering Europe, B.V. • Amsterdam, The Netherlands • Tel: +31 20 638 6523, Fax: +31 20 625 6018 • Email: info@balseal.nl • Web: www.balseal.nl