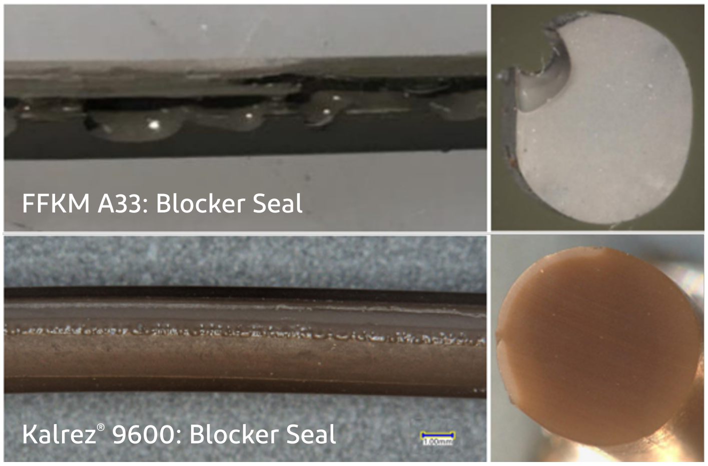
Application Profile

DuPont™ Kalrez® 9600 Perfluoroelastomer Parts Chamber Seals In High Temperature PECVD Process

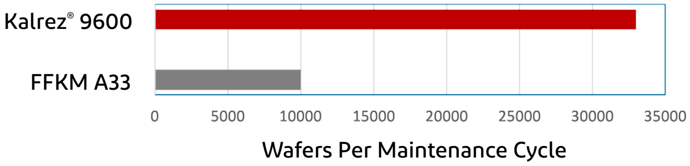
Plasma Enhanced Chemical Vapor Deposition (PECVD) is a demanding process that utilizes cycles of NF_3 plasma at elevated temperatures as high as 250 °C and above to produce hard masks and diverse film materials in 3D NAND structures. Seal degradation is a major issue, and in addition to causing unplanned downtime, can cause chamber contamination. A major 300 mm US Fab faced this issue and Kalrez® 9600 perfluoroelastomer parts met the challenge.

Process Chemistry:	Hard Mask Precursors
Cleaning chemistry:	NF_3 Plasma
Process conditions:	Chamber Temperature > 250 °C
Incumbent solution:	FFKM A33
Performance challenge:	Long seal durability



Kalrez® 9600 Benefits:

- Seal lifetime extended to >3X the incumbent FFKM A33, resulting in much higher wafer output
- Cleaner seal material resulted in lower chamber contamination, decreased chamber preparation time and overall reduced maintenance cycle time



Visit us at kalrez.com

The information set forth herein is furnished free of charge, is based on technical data that DuPont believes to be reliable and represents typical values that fall within the normal range of properties. This information relates only to the specific material designated and may not be valid for such material used in combination with other materials or in other processes. It is intended for use by persons having technical skill, at their own discretion and risk. This information should not be used to establish specification limits nor used alone as the basis of design. Handling precaution information is given with the understanding that those using it will satisfy themselves that their conditions of use present no health or safety hazards and comply with applicable law. Since conditions of product use and disposal are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. As with any product, evaluation under end use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate or a recommendation to infringe on patents.

CAUTION: Do not use DuPont materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with the DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative.

DuPont's sole warranty is that our products will meet our standard sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, DUPONT SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR NON INFRINGEMENT. DUPONT DISCLAIMS LIABILITY FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.

DuPont™, the DuPont Oval Logo, and all trademarks and service marks denoted with ™, ℠ or ® are owned by affiliates of DuPont de Nemours, Inc. unless otherwise noted. © 2022 DuPont. All rights reserved.

(06/2022) Reference: KZE-A40096-00-B0622