

## Product Description

DuPont™ Kalrez® 0090 perfluoroelastomer parts are specifically designed for the oil and gas industry to provide outstanding resistance to rapid gas decompression (RGD), as well as broad chemical resistance, the standard for Kalrez® parts. In testing conducted by the Materials Engineering Research Laboratory (MERL), Kalrez® 0090 was given the highest rating, “0”, indicating “no internal cracks, holes or blisters of any size.” Kalrez® 0090 perfluoroelastomer parts are the only FFKM parts that have been independently tested and certified by MERL to meet NORSOK M-710 requirements. As a result of this groundbreaking development, industries that require elastomer seals to resist rapid gas decompression and perform in harsh chemical environments like downhole oil and gas production and chemical processing, can increase uptime through improved meantime between failure with Kalrez® 0090.

### Typical Physical Properties<sup>1</sup>

Color	Black
Maximum Application Temperature <sup>2</sup> , °C (°F)	250 (482)
Maximum Application Pressure <sup>2</sup> , MPa (psi)	17.24 (2500)
Durometer, Shore A <sup>3</sup>	95
Durometer, Shore M (o-ring)	
50% Modulus <sup>4</sup> , MPa (psi)	14.20 (2060)
Elongation at break <sup>4</sup> , %	80
Tensile at break <sup>4</sup> , MPa (psi)	19.51 (2830)
Compression set <sup>5</sup> , % (70 hours at 204°C (400°F))	
Pellet	
Size 214 O-Ring	40

### Specific Gravity, g/cc

<sup>1</sup>Not to be used for specification

<sup>2</sup>DuPont proprietary test method – maximum application temperature and pressure may vary with seal design and application specifics

<sup>3</sup>ASTM D2240 (pellet test specimen)

<sup>4</sup>ASTM D412, 500mm/min

<sup>5</sup>ASTM D395B



## Additional Physical Properties<sup>1</sup>

---

Tg<sup>2</sup>, °C (°F)

TR-10<sup>3</sup>, °C (°F)

Brittle Point<sup>4</sup>, °C (°F)

Linear Coefficient of Thermal Expansion, /°C (/°F)

Abrasion Resistance<sup>5</sup>, (volume loss, cubic mm)

Coefficient of friction<sup>6</sup> (to steel)

Static

Dynamic

Volume resistivity<sup>7</sup>, ohms/square

Surface resistivity<sup>7</sup>, Ohm-cm

Dielectric Constant<sup>8</sup> at 150°C and 1 MHz

Dissipation Factor<sup>8</sup> at 150°C and 1MHz

---

<sup>1</sup>Not to be used for specification

<sup>2</sup>DuPont proprietary test method – maximum application temperature and pressure may vary with seal design and application specifics

<sup>3</sup>ASTM D1329

<sup>4</sup>ASTM D746

<sup>5</sup>Din 53 516

<sup>6</sup>ASTM 1894

<sup>7</sup>ASTM D 257

<sup>8</sup>ASTM D150

---

Visit us at [kalrez.dupont.com](http://kalrez.dupont.com) or [vespel.dupont.com](http://vespel.dupont.com)

---

Contact DuPont at the following regional locations:

**North America**

800-222-8377

**Latin America**

+0800 17 17 15

**Europe, Middle East, Africa**

+41 22 717 51 11

**Greater China**

+86-400-8851-888

**ASEAN**

+65-6586-3688

**Japan**

+81-3-5521-8484

---

The information set forth herein is furnished free of charge and is based on technical data that DuPont believes to be reliable and falls within the normal range of properties. It is intended for use by persons having technical skill, at their own discretion and risk. This data 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 particular conditions of use present no health or safety hazards. 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 in medical applications involving permanent implantation in the human body. For other medical applications, discuss with your DuPont customer service representative and read Medical Caution Statement H-50103-3.

Copyright © 2010 DuPont. The DuPont Oval Logo, DuPont™, The miracles of science™, Kalrez®, and Vespel® are trademarks or registered trademarks of E. I. du Pont de Nemours and Company or its affiliates. All rights reserved.

Kalrez® Application Guide – September 2010



*The miracles of science™*