



Kalrez[®] perfluoroelastomer parts

From DuPont Performance Elastomers

Compound 1050LF (color: black)

General Description

Kalrez[®] 1050LF is a carbon black filled compound having excellent all round chemical resistance. It also has a good resistance to hot water/steam, excellent amine resistance and good compression set properties. It has a maximum operating temperature of 280°C.

It is a general purpose material, often used in the chemical process industries in the form of O-rings, gaskets and other custom parts. Compound 1050LF is not recommended for applications where rapid temperature cycling properties are required.

The physical properties of Kalrez[®] 1050LF are as follows:

Typical Physical Properties¹

Hardness ² , Shore A ±5	82
100% Modulus ³ , MPa (psi)	12.4 (1800)
Tensile Strength at Break ³ , MPa (psi)	15.8 (2700)
Elongation at Break ³ , %	125
Compression Set ⁴ , 70 hr at 204°C, %	35

¹ Not to be used for specifications

² ASTM D2240

³ ASTM D412, 500 mm/min (20 in/min)

⁴ ASTM D395 B, pellets

Chemical Resistance

Material Compound	Kalrez [®] 1050LF
<i>Chemical Resistance to:</i>	
Aromatic/Aliphatic oils	+++
Acids	++
Alkalis	+++
Alcohols	+++
Aldehydes	+++*
Amines	+++*
Ethers	+++
Esters	+++
Ketones	+++
Steam/Hot water	++
Strong Oxidizers	0
Ethylene/Propylene Oxide	-

+++ = Excellent

+ = Good

- = Poor

* = Recommended compound for this chemical

++ = Very Good

0 = Marginal

-- = Not Recommended

Miscellaneous Properties

Many miscellaneous properties are of interest for specific applications. Some of these are unaffected by compound choice while others vary with hardness or extensibility. As an example, coefficient of friction typically increases as hardness decreases. In general, miscellaneous physical properties are similar to those of Viton® fluoroelastomer.

The following are some of the properties for Kalrez®:

Physical Properties

Specific gravity, g/cm³ 1.90–2.00

Miscellaneous

Oxygen — Autogenous Ignition Temperature
Compound 1050LF 313°C (595°F)
Compound 1045 370°C (698°F)

Thermal Properties

Linear coefficient of thermal expansion (25–250°C)

$$L = L_0 (1 + a\Delta T)$$

$$a = 2.3 \times 10^{-4}/^{\circ}\text{C}$$

$$= 1.3 \times 10^{-4}/^{\circ}\text{F}$$

Specific heat

at 50°C (122°F) = 0.945 J/g (0.226 cal/g)

at 100°C (212°F) = 0.974 J/g (0.233 cal/g)

at 150°C (302°F) = 1.053 J/g (0.252 cal/g)

Permeation Rates of Gases

Gas	Nitrogen	Oxygen	Helium	Hydrogen	Argon	Krypton	Xenon
Temperature, °C	RT	RT	RT	93	93	93	93
Rate**	0.05	0.09	2.5	113	6.1	9.9	19.9

**x10⁻⁹ cm³-cm

s - cm²-cm Hg ΔP

For further information please contact one of the addresses below, or visit us at our website at www.dupontelastomers.com/kalrez

Global Headquarters — Wilmington, DE USA

Tel. +1-800-853-5515

+1-302-792-4000

Fax +1-302-792-4450

European Headquarters — Geneva

Tel. +41-22-717-4000

Fax +41-22-717-4001

South & Central America Headquarters — Brazil

Tel. +55-11-4166-8978

Fax +55-11-4166-8989

Asia Pacific Headquarters — Singapore

Tel. +65-6275-9383

Fax +65-6275-9395

Japan Headquarters — Tokyo

Tel. +81-3-6402-6300

Fax +81-3-6402-6301

The information set forth herein is furnished free of charge and is based on technical data that DuPont Performance Elastomers believes to be reliable. It is intended for use by persons having technical skill, at their own discretion and risk. 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 of our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. As with any material, evaluation of any compound 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 any patents. While the information presented here is accurate at the time of publication, specifications can change. Check www.dupontelastomers.com for the most up-to-date information.

CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, discuss with your DuPont Performance Elastomers customer service representative and read Medical Caution Statement H-69237.

DuPont™ is a trademark of DuPont and its affiliates.

Kalrez® and Viton® are registered trademarks of DuPont Performance Elastomers.

Copyright © 2005 DuPont Performance Elastomers L.L.C. All rights reserved.

(04/04) Printed in U.S.A.

Reorder no: KZE-D10108-00-C0204

DuPont
Performance Elastomers