



**Kalrez**<sup>®</sup> perfluoroelastomer  
parts

From DuPont Performance Elastomers

## Physical Properties and Compound Comparisons

Kalrez<sup>®</sup> perfluoroelastomer parts are available in a number of different compounds that are formulated to optimize properties and give the best possible performance in various applications. Modification of the finished properties is achieved by use of fillers and other additives.

Table 1 summarizes the basic physical properties of the most commonly used compounds. Descriptions of the key attributes of each compound and their general areas of application follow.

**Table 1**  
**Typical Physical Properties<sup>a</sup>**

Compounds	Standard			Specialty			
	6375	7075	4079	1050LF	1058	3018	2037
Maximum Application Temperature, °C (°F) <sup>b</sup>	275 (527)	327 (620)	316 (600)	288 (550)	260 (500)	288 (550)	220 (428)
Durometer Hardness, Shore A <sup>c</sup> , points ±5	75	75	75	82	65	91	79
100% Modulus, <sup>d</sup>							
psi	1,050	1,100	1,050	1,800	675	2,450	900
MPa	7.24	7.58	7.24	12.40	4.65	16.88	6.20
Tensile Strength at Break <sup>d</sup> ,							
psi	2,200	2,600	2,450	2,700	1,300	3,150	2,450
MPa	15.16	17.91	16.88	18.60	8.96	21.70	16.88
Elongation at Break <sup>d</sup> , %	160	160	150	125	180	125	200
Compression Set <sup>e</sup> , % 70 hr at 204° C (400° F)	25	12	25	35	40	35	27
Tr10, <sup>f</sup> °C (°F)	-3 (26)	-4 (24)	-2 (28)	-4 (24)	-	5 (41)	3 (37)

<sup>a</sup>Not to be used for specifications

<sup>b</sup>DuPont Performance Elastomers proprietary method; performance will vary with seal design and application specifics

<sup>c</sup>ASTM D2240

<sup>d</sup>ASTM D412, 500 mm/min (20 in/min)

<sup>e</sup>ASTM D395B, pellets

<sup>f</sup>ASTM 1329

## **Standard Compounds**

**Compound 6375**—Kalrez<sup>®</sup> Spectrum<sup>™</sup> 6375 is a carbon black-filled compound for general use in o-rings, seals, diaphragms and other parts specifically for the chemical process industry. This compound has excellent broad chemical resistance, good mechanical properties, and outstanding hot-air aging properties. Kalrez<sup>®</sup> 6375 is well suited for use in mixed process streams because of its excellent resistance to acids, bases, and amines. It is also recommended for use in hot water, steam, pure ethylene oxide and propylene oxide.

**Compound 7075**—Kalrez<sup>®</sup> Spectrum<sup>™</sup> 7075 broadens Kalrez<sup>®</sup> sealing options with a perfluoroelastomer that has enhanced physical performance properties including very low compression set and improved seal force retention. It is a carbon black-filled compound utilizing new and proprietary cure chemistry technology with mechanical properties designed for improving sealing performance in both high temperature environments and temperature cycling situations. Kalrez<sup>®</sup> 7075 O-rings have a glossy finish for dynamic applications that may benefit from less drag. Kalrez<sup>®</sup> 7075 was specifically developed for the chemical and hydrocarbon industries when improved thermal resistance is needed. It offers the enhanced elastomeric properties outlined above while providing a chemical resistance better than the industry standard set by Kalrez<sup>®</sup> 4079.

**Compound 4079**—A low compression set compound for general-purpose use in o-rings, diaphragms, seals, and other parts used in the process and aircraft industries. It is a carbon black-filled compound with excellent chemical resistance, good mechanical properties, and outstanding hot air aging properties. It exhibits low swell in organic and inorganic acids and aldehydes and has good response to temperature cycling effects. This compound is not recommended for use in hot water/steam applications or in contact with certain hot aliphatic amines, ethylene oxide, or propylene oxide.

## **Specialty Compounds**

**Note:** Before ordering Kalrez<sup>®</sup> parts in specialty compounds, please consult with DuPont Performance Elastomers or Distributor Technical Staff to determine properties needed for the application. Specialty compound products are generally not held in inventory.

**Compound 1050LF**—A carbon black-filled, general-purpose compound for o-rings, seals, and other parts used in chemical process industries. It has good hot water/steam, and excellent amine resistance. 1050LF is not recommended for use in organic or inorganic acids at high temperatures.

**Compound 1058**—A soft, low modulus, carbon black-filled compound with chemical resistance similar to Compound 1050LF. It is typically used in applications that require low sealing force or high extensibility including liquid chromatography septa, seals/seats for relief valves and tubing. It shrinks more than other Kalrez<sup>®</sup> compounds so finished parts may differ from standard specifications.

**Compound 3018**—A carbon black-filled compound similar to Compound 1050LF, but with higher hardness/modulus. This compound performs well in hot water/steam and offers the best high pressure extrusion resistance. It is generally used in oil field and process industry applications where these properties coupled with good amine and general chemical resistance are required.

**Compound 2037**—A non-black-filled compound that is well suited for selected applications in the semiconductor and other markets that demand high purity elastomers. Compound 2037 has excellent chemical resistance exhibiting low swell in organic acids, inorganic acids, esters, ketones, and aldehydes. It also offers good mechanical properties.

**Other Properties**

Other properties, such as coefficients of friction, thermal conductivity, electrical, permeability, etc., may be of interest for specific applications. For more detailed information, please refer to the specific compound in the Kalrez® Application Guide.

**Product Safety**

Highly toxic products can be generated when Kalrez® parts are exposed to fire or temperatures in excess of 400° C so respiratory equipment should be used if ventilation is inadequate. Kalrez® parts are incompatible and should not be exposed to alkali metals or interhalogen compounds. Please consult "Guide For Safety In Handling Kalrez® Perfluoroelastomer Parts" (KZE-A10301) for additional information.

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For further information please contact one of the offices below, or visit our website at [www.dupontelastomers.com/kalrez](http://www.dupontelastomers.com/kalrez)

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