CP75BK31 Datasheet

Black Ultra High Temp Perfluoroelastomer 75A

Overview

Canrez® CP75BK31 is Canyon's ultra-high temperature resistant FFKM. Withstanding temperatures up to 335°C (635°F), CP75BK31 is one of the most thermally stable elastomeric materials available. It is also nearly universally chemically resistant. Compare to Kalrez 7075.

CP75BK31 has a service temperature range of -15°C to 335°C and can handle excursions up to 350°C in air filled environments. Not recommended for high temperature steam environments.

Features & Benefits

- Ultra-high temperature resistance
- Near universal chemical resistance
- Very low compression set

Recommended Applications

- Semiconductor
- Chemical Processing
- Aerospace
- Liquid Chromatography Service

Service Temperature

- -15°C to 335°C (5°F to 635F)
- Excursions < 350°C (660°F)

Test Data

Table 1. Physical Properties	
Color	Black
Hardness, Shore A	75
Tensile Strength, psi (MPa)	2750 (18.9)
Elongation	218%
100% Modulus, psi (MPa)	780 (5.4)
Specific Gravity, g/cm^3	2
Linear Coefficient of Thermal Expansion (1/K)	3.2 x 10^{-4}

CP75BK31 is now available on the Canyon Components online store.

Looking for specific chemical compatibilities or desire more material information? Please Contact Us!

Table 2. Gas Permeation Rate (T=30°C)	
Oxygen (cm3(STP)·mm/m2·atm·d)	452
Nitrogen (cm3(STP)·mm/m2·atm·d)	249
Helium (cm3(STP)·mm/m2·atm·d)	5400

Table 3. Aluminum Stiction	
Maximum Force, N	315
Energy, Nmm	350

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High Temperature Aging

Table 4. Compression Set	
70hrs at 200°C	6%
70hrs at 275°C	9%
70hrs at 300°C	16%
70hrs at 316°C	22%
70hrs at 320°C	33%
70hrs at 325°C	35%
168hrs at 300°C	17%
1000hrs at 250°C	21%
1000hrs at 250°C + 2hrs Cool Down	31%

Table 5. Heat Aging – 70 hrs at 290°C	
Hardness, Shore A	-3
Weight Loss, %	-0.5

Table 6. Heat Aging – 72 hrs at 300°C	
Hardness, Shore A	-4
Weight Loss, %	-2

Table 7. Heat Aging – 72 hrs at 335°C	
Hardness, Shore A	-11
Weight Loss, %	-4

Table 8. Heat Aging – 72 hrs at 350°C	
Hardness, Shore A	-15
Weight Loss, %	-10

Table 9. Specific Heat	
50°C, J/g	0.99
100°C, J/g	1.05
150°C, J/g	1.12

Chemical Compatibility

Table 10. Nitric Acid, 65% – 168 hrs at 80°C	
Tensile Strength Change, %	-60
Ultimate Elongation Change, %	+35
Volume Change, %	+3

Table 11. Ammonia, 30% – 168 hrs at 100°C	
Tensile Strength Change, %	-6
Ultimate Elongation Change, %	+12
Volume Change, %	+3

Table 12. Ethylene Diamine – 336 hrs at 60°C	
Tensile Strength Change, %	+30
Ultimate Elongation Change, %	+24
Volume Change, %	+2

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Table 13. HNO3 – 168 hrs at 80°C	
Hardness, Shore A	-6
Tensile Strength Change, %	+0
Ultimate Elongation Change, %	+0
Volume Change, %	+2

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