CP80BK01 Datasheet

Black High Temp Perfluoroelastomer 80A

Overview

Canrez® CP80BK01 is Canyon's flagship FFKM offering near universal chemical resistance and excellent high-temperature resistance at a low cost. Compare it to Kalrez 6375, 4079, 7375, and 7075.

CP80BK01 has a service temperature range of -15°C to 320°C and withstands short excursions outside that range.

Features & Benefits

- Near universal chemical resistance
- High Temperature Resistance
- Low Compression Set
- Cost Effective

Recommended Applications

- Semiconductor
- Chemical Processing
- Solvents, MEK, DMF, Acetone
- Esters, Ethers, Ketones, Aldehydes, Xylene
- Sour Gas < 65%

Service Temperature

- -15°C to 320°C (5°F to 610F)
- Steam < 300°C (580°F)
- Amines < 38°C (100°F)

Test Data

Table 1. Physical Properties	
Color	Black
Hardness, Shore A	80
Tensile Strength, psi (MPa)	2110 (14.5)
Elongation	165%
100% Modulus, psi (MPa)	1600 (11)
Specific Gravity, g/cm^3	2.00
Fluorine Percentage	72.5%
Linear Coefficient of Thermal Expansion (1/°C)	3.5 x 10^{-4}

Table 2. Compression Set	
70hrs at 200°C	20%
70hrs at 280°C	35%
336hrs at 200°C	28%
336hrs at 230°C	42%

Table 3. Specific Heat	
50°C, J/g	0.98
100°C, J/g	1.05
150°C, J/g	1.12

Table 4. Gas Permeation Rate (T=30°C)	
Oxygen (cm3(STP)·mm/m2·atm·d)	445
Nitrogen (cm3(STP)·mm/m2·atm·d)	253
Helium (cm3(STP)·mm/m2·atm·d)	5388

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High Temperature Aging

Table 5. Heat Aging – 70 hrs at 300°C	
Hardness, Shore A	+2
Tensile Strength Change, %	-15
Ultimate Elongation Change, %	+10
Weight Change, %	+0

Table 6. Steam – 168 hrs at 300°C	
Hardness, Shore A	+0
Tensile Strength Change, %	+13
Ultimate Elongation Change, %	-15
Weight Change, %	-0.7

Table 7. Water – 168 hrs at 225°C	
Hardness, Shore A	-3
Tensile Strength Change, %	-14
Ultimate Elongation Change, %	+24
Volume Change, %	+2

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

Chemical Compatibility

Table 8. Toluene – 168 hrs at 150°C	
Hardness, Shore A	-2
Tensile Strength Change, %	+5
Ultimate Elongation Change, %	+4
Weight Change, %	+7

Table 9. MEK – 720 hrs at 45°C	
Hardness, Shore A	-4
Tensile Strength Change, %	+0
Ultimate Elongation Change, %	+0
Weight Change, %	+6

Table 10. HCL, 37% – 72 hrs at 80°C	
Hardness, Shore A	+0
Tensile Strength Change, %	-3
Ultimate Elongation Change, %	-13
Volume Change, %	+2

Table 11. Glacial Acetic Acid – 336 hrs at 100°C	
Hardness, Shore A	-12
Tensile Strength Change, %	-32
Ultimate Elongation Change, %	-1
Volume Change, %	+4

Table 12. MDEA – 168 hrs at 100°C	
Hardness, Shore A	-3
Tensile Strength Change, %	+0
Ultimate Elongation Change, %	+1
Volume Change, %	+3

Table 13. Nitric Acid, 65% – 168 hrs at 80°C	
Hardness, Shore A	-11
Tensile Strength Change, %	-28
Ultimate Elongation Change, %	+7
Volume Change, %	+8

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