CoreRes® C-375

Perfluoroelastomer Parts

CoreRes® C-375는 기존 과불소 Compound(FFKM)에 내화학성 특성을 최상화 한 제품으로써 Oil & Gas, Chemical 산업에 최적화 한 제품이다. 각종 반응성 Chemical 및 Hot water & vapor, 유기, 무기물, 솔벤트 및 Oil류 사용 환경에 최적화 된 제품이며 고온(230℃)에도 우수한 복원력을 (Compression Set) 갖는다. **CoreRes® C-375** 안정적인 기계적 성능을 발휘하며, 일반 FFKM에 비하여 고압, 고진공 Application 에도 뛰어난 RGD(Rapid Gas Decompression), ED(Explosive Decompression) 대한 저항성을 확보 하여 고정 부, 구동 부에 적용이 가능한 제품이다.

Features & Benefits

- Excellent Chemical Resistance
- Good physical properties
- Minimal contamination
- High temperature resistance

Applications

- Pumps Seals
- Pipes Seals
- Special type Seals
- Chemical delivery system
- Valve Seals
- Gas inlet seals
- KF fitting seals
- Filters

Recommend Process Applications

- Gas & Oil Industry
- Chemical Process Industry
- Semiconductor
- FPD
- Pharmacy Industry

Typical Physical Properties	
1. Color	Black
2. Tensile Strength (Mpa)	19.3
3. Elongation at Break (%)	170
4. 100% Modulus (Mpa)	7.4
5. Shore A Hardness	75
6. Compression Set on O-Ring #214 70hrs @ 200℃	21
7. Service Temperature	230℃

- 2~4번 ASTM D 412 규격
- 5번 ASTM D 2240 규격

고온 증기 노출 Test : 7days ,230°C

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Other FFKM

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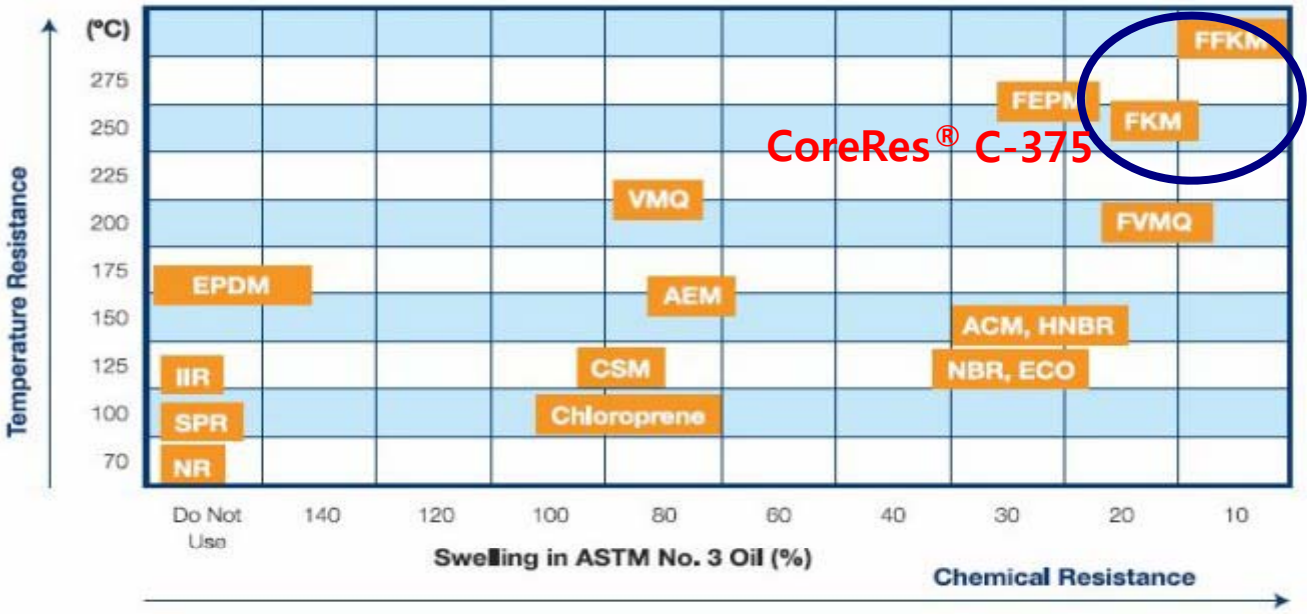

FLUID RESISTANCE OVERVIEW

Inorganic acids	A
Organic acids	A
Alkalis	A
Amines (RT)	A
Hot amines (> 70°C)	A
Water / Steam	A
Ketones	A
Esters	A
Ethers	A
Aldehydes	A
Alcohols	A
Hydrocarbons	A
Sour gas	A
Lubricants	A
Fluorinated fluids	C

Symbol	Volume Swelling (%)
A	< 10%
B	10 - 30%
C	30 - 50%
D	> 50 %

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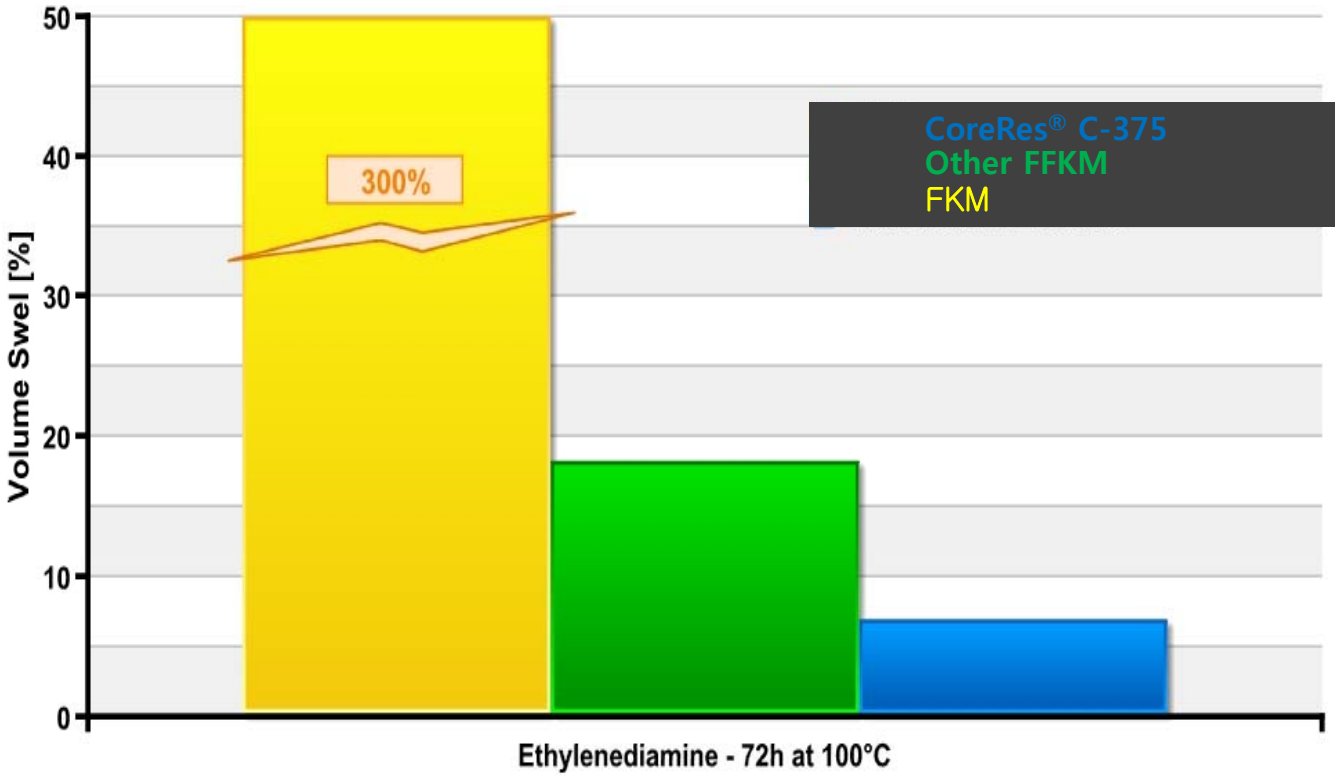

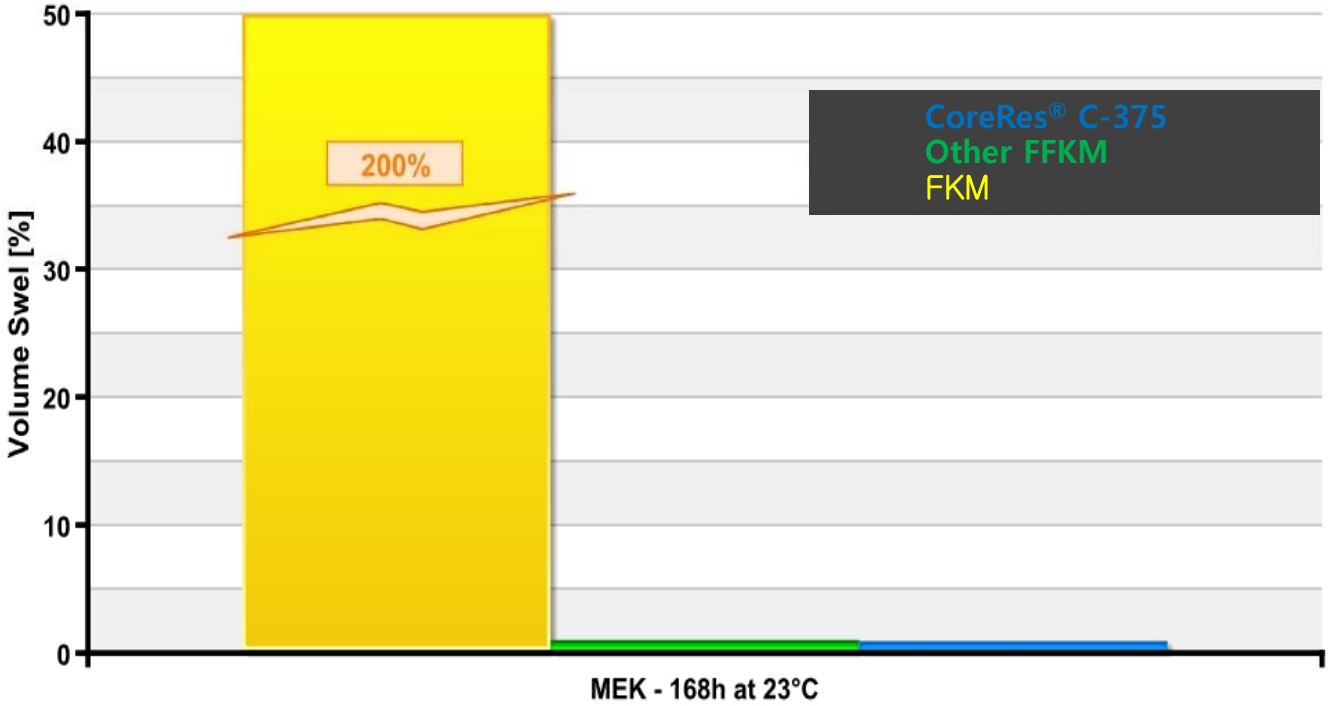

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INNORES

FLUID RESISTANCE

CHEMICAL AND PROCESS INDUSTRY (CPI)

Ethylenediamine	100°C	72 h
Δ Tensile Strength	%	-35
Δ Elongation at Break	%	+13
Δ Hardness	Shore A	-4
Δ Volume	%	+6.5
Ethylenediamine	**100°C**	**168 h**
Δ Tensile Strength	%	-40
Δ Elongation at Break	%	+9
Δ Hardness	Shore A	-7
Δ Volume	%	+9
2-aminoethanol (MEA – ethanolamine)	**150°C**	**72 h**
Δ Tensile Strength	%	-30
Δ Elongation at Break	%	+9
Δ Hardness	Shore A	-9
Δ Volume	%	+17
NH_3 28%	**100°C**	**336 h**
Δ Tensile Strength	%	-19
Δ Elongation at Break	%	-16
Δ Hardness	Shore A	-3
Δ Volume	%	+3.7
2-(2-aminoethoxy) ethanol (diglycolamine)	**150°C**	**168 h**
Δ Tensile Strength	%	-35
Δ Elongation at Break	%	+11
Δ Hardness	Shore A	-10
Δ Volume	%	+20
2-(2-aminoethoxy) ethanol (diglycolamine)	**200°C**	**168 h**
Δ Tensile Strength	%	-62
Δ Elongation at Break	%	+3
Δ Hardness	Shore A	-22
Δ Volume	%	+39

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INNORES

FLUID RESISTANCE

CHEMICAL AND PROCESS INDUSTRY (CPI) (CONT.)

N-methyl-diethanolamine (MDEA)	150°C	168 h
Δ Tensile Strength	%	-22
Δ Elongation at Break	%	-2
Δ Hardness	Shore A	-2
Δ Volume	%	+2
N-methyl-diethanolamine (MDEA)	**200°C**	**168 h**
Δ Tensile Strength	%	-38
Δ Elongation at Break	%	-6
Δ Hardness	Shore A	-5
Δ Volume	%	+8
Dipropylamine	**150°C**	**168 h**
Δ Tensile Strength	%	-27
Δ Elongation at Break	%	-14
Δ Hardness	Shore A	-4
Δ Volume	%	+6.5
Dipropylamine	**200°C**	**168 h**
Δ Tensile Strength	%	-29
Δ Elongation at Break	%	-10
Δ Hardness	Shore A	-5
Δ Volume	%	+6.9

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INNORES

FLUID RESISTANCE

CHEMICAL AND PROCESS INDUSTRY (CPI) (CONT.)

Nitric acid 65 %	80°C	72 h
Δ Tensile Strength	%	-30
Δ Elongation at Break	%	+6
Δ Hardness	Shore A	-5
Δ Volume	%	+5
Glacial acetic acid	**100°C**	**336 h**
Δ Tensile Strength	%	-13
Δ Elongation at Break	%	-15
Δ Hardness	Shore A	-5
Δ Volume	%	+5
Formic acid 85%	**100°C**	**168 h**
Δ Tensile Strength	%	-14
Δ Elongation at Break	%	-5
Δ Hardness	Shore A	-5
Δ Volume	%	+7
Water	**220°C**	**168 h**
Δ Tensile Strength	%	-17
Δ Elongation at Break	%	+23
Δ Hardness	Shore A	+1
Δ Volume	%	+2.0
Steam	**220°C**	**168 h**
Δ Tensile Strength	%	-29
Δ Elongation at Break	%	+24
Δ Hardness	Shore A	+1
Δ Volume	%	0

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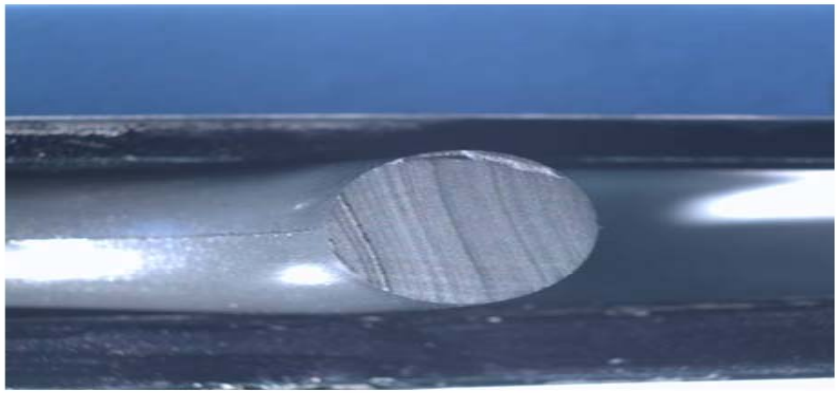
RAPID GAS DECOMPRESSION TESTS

The compound showed in the previous page was successfully tested in the following conditions referring to NORSOK standard M-710 rev.2. #312 O-rings (13.64 mm internal diameter - 5.33 mm cross-section) were submitted to testing.

Test	Temperature °C	Pressure Bar	Media	Decompression rate bar/min	cycle #	squeeze rate %	o-ring #	NORSOK rating
1	100	150	CH_4/CO_2 90/10	20	10	12	4	0000-0000-1000-0000
2	100	300	CH_4/CO_2 90/10	20	1	12	2	0000-0000

Whereby the NORSOK rating numbers are as follows:

- 0: no internal cracks, holes or blisters of any size.
- 1: less than 4 internal cracks, each shorter than 50% of cross section with a total crack length less than the cross section.



Test conditions according to Norsok M 710

- Gas mixture: 90% CH4 and 10% CO2
- Temperature: 100° C
- Pressure: 150 bar
- Decompression rate: 20 bar/min
- Test cycles: 10
- Squeeze: 12%
- -312 O rings tested
- 5.33 mm cross section

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INNORES

C-375의 침적 실험

평가 기호

A : 체적팽창률 0~10%

B : 체적팽창률 10~20%

C : 체적팽창률 20% 이상

번호	약 품 명	영 문 약 칭	침적온도 (℃)	침적시간 (Hr)	C-375 평가
1	물	Water	200	168	A
2	빙초산	Glacial acetic acid	100	70	A
3	질산 (70%)	Nitric acid (70%)	100	70	A
4	황산 (98%)	Sulfuric acid (98%)	178	70	A
5	말레산	Maleic acid	90	168	A
6	수산화 암모늄	Ammonium hydroxide	100	70	A
7	요소	Urea	200	168	A
8	에피클로로히드린	Epichlorohydrin	100	70	A
9	부틸알데히드	Butyraldehyde	50	168	C
10	톨루엔 다이 이소 시아네이트	Toluene diisocyanate	100	168	B
11	톨루엔	Toluene	50	168	A
12	1N 가성소다	1N-NaOH	85	70	A
13	인산	Phosphoric acid	150	70	A
14	벤젠	Benzene	50	168	A
15	페놀	Phenol	180	70	A
16	T-부틸 메틸 에테르	T-Butyl methyl ether	40	100	A
17	메틸 에틸 케톤	Methyl ethyl ketone	80	100	A
18	에틸렌 디아민	Ethylene diamine	100	100	A