주식회사 이노레스씰
TEL : 032-584-7875 ~ 8
FAX : 032-584-7879
www.innores-seal.com

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TECHRES®
PERFLUOROELASTOMER PARTS

IP39

PRODUCT INFORMATION

Key Features

TechRes® IP39 is a perfluoroelastomer designed to optimize sealing performance in harsh environments and special conditions. TechRes® IP39 has excellent resistance to almost all chemicals, including acids, alkalis, ketones, esters, alcohols, and hot water, performs well under high temperatures with low compression set, and exhibits excellent chemical resistance to various fluids. It also minimizes particle formation and weight loss in oxygen and fluorine plasma environments, with superior elasticity and extended seal life under pressure. . It also minimizes particle generation and decreases weight loss in oxygen and fluorine plasma environments, making it suitable for both dynamic and static seals due to its good mechanical properties, including good elasticity and the ability to extend seal life under pressure. Its highest recommended working temperature is 320°C.

Typical Physical properties

Color	Black
Specific Gravity, Kg/㎤	2.20
100% Modulus[a], Mpa	11.0
Tensile Strength[a], Mpa	17.8
Elongation at break[a], %	144.3
Hardness Shore A[b]	80
Compression Set[c], % (70 hr at 250°C)	21
Max. Continuous Service Temperature, °C	320

[a] ASTM D412(dumbbell test specimens)

[b] ASTM D2240(pellet test specimens)

[c] ASTM D395B(AS568 #214 O-Ring test specimens)

Features and Benefits

Stability at high temperatures / Broad chemical compatibility / Low compression set / Excellent mechanical properties

Applications

Petrochemical industry / Energy industry / Aerospace industry / Nuclear industry / LCD and semiconductor industry

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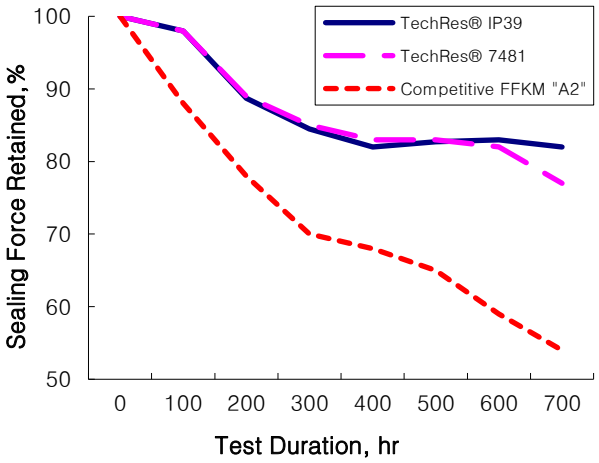
Compression Set Performance *
(70 hr data)

Material Tested,%

Compound	250°C	300°C	316°C
TechRes® IP39	22	42	53.5
TechRes® 7481	22	42	53
Competitive FFKM "A2"	45	88	Sample Failed

*ASTM D395B(AS568 #214 O-Ring test specimens)

Seal Retention Capability



ISO 3384 method A, 200°C air

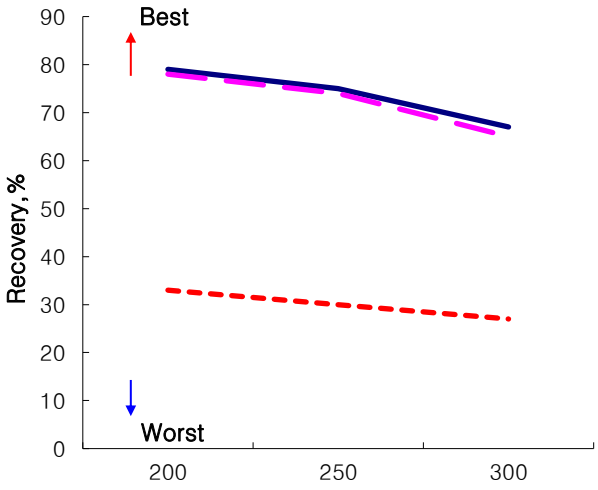
PRODUCT INFORMATION

Thermal Resistance

Heating aging 70 h @280°C		
100% Modulus	Mpa	9.5
Tensile Strength	Mpa	17.3
Elongation at break	%	175
Hardness	Shore A	81
Heating aging 70 h @300°C		
100% Modulus	Mpa	7.8
Tensile Strength	Mpa	15.7
Elongation at break	%	210
Hardness	Shore A	82
Heating aging 70 h @316°C		
100% Modulus	Mpa	6.6
Tensile Strength	Mpa	13.5
Elongation at break	%	243
Hardness	Shore A	82

O-Ring Resilience

While most compounds have good compression set, many lack resilience. **TechRes® IP39** boasts strong resilience.



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FLUID RESISTANCE OVERVIEW

Inorganic acids	A
Organic acids	A
Alkalis	A
Amines (RT)	A
Hot amines (> 70℃)	C
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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