V76WF

Precision Polymer Engineering

Fluorosurfactant-free chemical resistant FEPM for chemical pumps & valves

V76WF is a fluorosurfactant-free alternative to V76W, a PPE grade with outstanding chemical resistance and good low temperature performance. It is particularly suited to applications which have contact with polar solvents, bases, water and steam.

V76WF uses a fluorosurfactant-free version of the polymer used in V76W. The two materials are otherwise compounded and processed identically.

Testing has been carried out that shows, as detailed below, strong alignment between the original and NFS (non-fluorosurfactant) versions from a thermal and mechanical perspective.

Material Properties	Method	V76W	V76WF
Hardness (Shore A)	ASTM D412	70	70
Hardness (IRHD)	ASTM D1415	76	77
Density (g/cm^3)	ASTM D792	2.08	2.07
Tensile Strength (MPa)	ASTM D412	14.5	14.3
Elongation at Break (%)		265%	250%
Modulus @ 50% (MPa)		4.2	3.7
Modulus @ 100% (MPa)		7.8	7.8
Compression Set (72h @ 200°C / 392°F)	ASTM D395 Method B	34%	32%
Compression Set (72h @ 200°C / 392°F)	ISO 815 Method B	57%	55%
Compression Set (72h @ 200°C / 392°F)	ISO 815 Method C	27%	26%

Table comparing typical properties of original material against new NFS version

Thermal Performance: (Low Temperature)

Low temperature flexibility has been compared using the midpoint Glass Transition Temperature (Tg) obtained through Differential Scanning Calorimetry (DSC) ASTM D3148.

The results show a high degree of correlation between the original and NFS materials.

Material Grade	Glass Transition Temperature (°C)
V76W	-6.3°C / -20.7°F
V76WF	-6.8°C / -19.8°F

DSC: Comparable Glass Transition Temperature

V76WF is part of PPE's range of fluorosurfactant-free fluoroelastomer materials. It has been developed to be more environmentally sustainable.