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BTW BE0416.005.581
RPR Dendermonde



Dynaflon® O-rings/seamless PTFE encapsulated O-rings with Viton core

Vaneflon is producing this very unique Dynaflon® O-ring for more than 25 years.

The Dynaflon® O-ring (Kamlock, D-shaped, Orings and so on) brings our customers advantages over FEP or PFA encapsulated O-rings.

It combines the chemical resistance of PTFE together with the sealing performance of Viton.

Customers (pharmaceutical, food and chemical industry) who have issues with the life-time or re-use of their FEP encapsulated O rings will find a clear interest and value in using Dynaflon® O-rings.

Where FFKM O-rings are a very high cost alternative, Dynaflon® O-rings can provide the right solution over FEP or PFA rings with the following benefits:

- Superior chemical resistance,
- Superior tensile strength,
- Superior elongation,
- Lower coefficient of friction (is important for even static applications when you close something and need to apply a torque),
- Superior folding endurance
- Higher max temp capability as the melting temp of PTFE is also higher versus FEP (327°C instead of 260°C).
- Superior versus solid PTFE O-rings that have issues during assembly or leakage because of the lack of elasticity (but still bringing the chemical resistance).

The data hereafter shows that PTFE outperforms FEP and PFA on different aspects:
(Data source: DuPont™ and Solvay™)

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Mechanical Properties

Property	ASTM Standard	Unit	DuPont™ PTFE	DuPont™ FEP	DuPont™ PFA	DuPont™ ETFE
Specific Gravity	D792	--	2.15	2.15	2.15	1.76
Tensile Strength	D1457 D1708 D638	MPa (psi)	21-34 (3,000-5,000)	23 (3,400)	25 (3,600)	40-46 (5,800-6,700)
Elongation	D1457 D1708 D638	%	300-500	325	300	150-300
Flexural Modulus	D790	MPa (psi)	496 (72,000)	586 (85,000)	586 (85,000)	1,172 (170,000)
Folding Endurance	D2176	(MIT) cycles	>10 ⁶	5-80 x 10 ²	10-500 x 10 ²	10-27 x 10 ²
Impact Strength	D256	J/m (ft·lb/in)	189 (3.5)	No Break	No Break	No Break
Hardness	D2240	Shore D pencil	50-65 HB	56 HB	60	72
Coefficient of Friction, Dynamic	D1894	--	0.05-0.10	0.08-0.3	--	0.3-0.4

Thermal Properties

Property	ASTM Standard	Unit	DuPont™ PTFE	DuPont™ FEP	DuPont™ PFA	DuPont™ ETFE
Melting Point	D3418	°C (°F)	327 (621)	260 (500)	306 (582)	267 (512)
Cure Temperature	--	°C (°F)	379-429 (715-805)	360-385 (680-725)	379-399 (715-750)	302-323 (575-615)
Flame Rating*	UL94	--	V0	V0	V0	V0
Limiting Oxygen Index	D2863	%	>95	>95	>95	30-36
Heat of Combustion	D240	MJ/kg (Btu/lb)	5.1 (2,200)	5.1 (2,200)	5.3 (2,300)	13.7 (5,900)

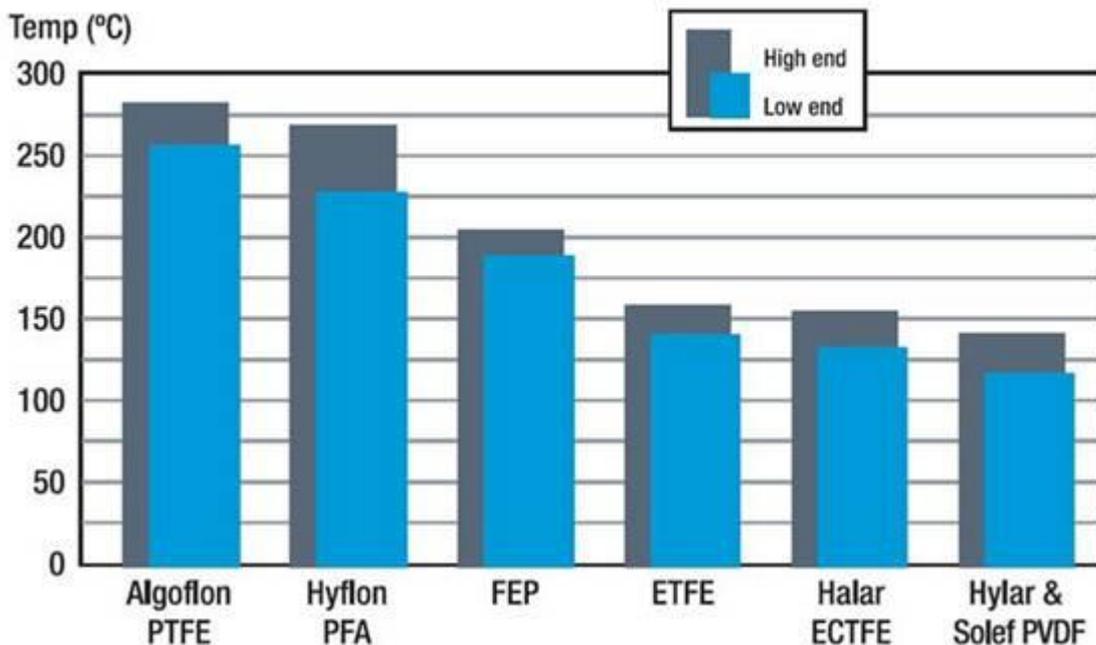
* Statements regarding behavior in a flame situation are not intended to reflect hazards presented by this or any other material when under actual fire conditions.

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Fluoropolymer Maximum Operating Temperature Range



PTFE outperforms FEP also on the chemical resistance:

