

ALFLON A/SM AND JE SERIES MATERIALS

The **A-Series** of **Alflon** compounds are standard PTFE filled products for service temperatures ranging from cryogenic to 500°F.

The **SM-Series** products are PTFE fluoropolymers alloyed with Polyphenylene-Sulfide and reinforced with graphite/carbon fibers. This line was developed to offer higher compressive strength, better thermal conductivity and higher abrasion resistance with decreased creep and thermal expansion.

The **JE-Series** materials are designed for ultra performance in a fluoropolymer-based compound. These materials provide excellent compressive strength and offer temperature performance up to 500°F.

SM-550-TFM-HT: is a fluoropolymer-based compound reinforced with mica, designed for demanding applications. Compression molded parts and shapes offer superior thermal and mechanical properties making it suitable for extreme environment components requiring high-temperature, high-pressure, and creep resistance. Ideal for abradable seals for turbo-equipment.

SM-650-HT: is a perfluoropolymer-based compound reinforced with polymer and ceramic fibers. SM-650-HT is designed for extreme conditions of temperature and pressure. Compression molded parts and shapes offer superior sealing and wear performance. 650-HT has been tried and proven in steam-injection, oil-field equipment seals.

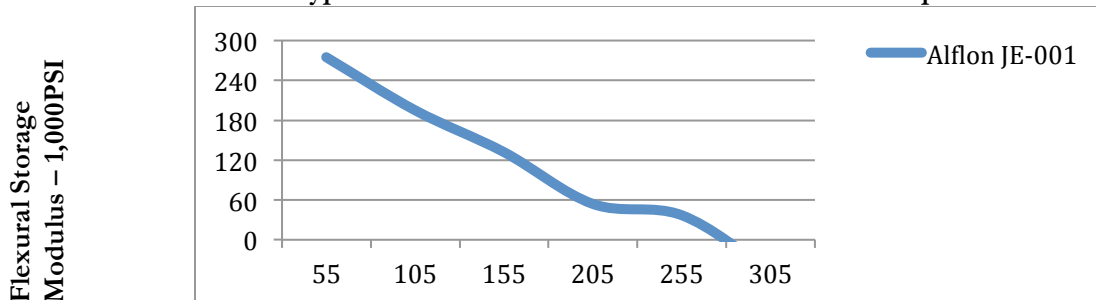
SM-695-01: is a perfluoropolymer-based compound reinforced with proprietary ceramics and fibers specifically designed for demanding applications. Compression molded parts and shapes offer superior thermal and mechanical performance up to 675°F and 10,000 psi. SM-695-01 is suitable for SAGD service components requiring high-temperature, high-pressure, and creep resistance in steam and hydrocarbon service.

A-4025-G: carbon/graphite filled PTFE with improved thermal and electrical conductivity. Very low coefficient of friction, excellent wear resistance in dry and wet environments while maintaining PTFE's excellent resistance to corrosion media. A-4025-G is the best PTFE compound for bearings, flow meter gears, compressor packings, and oil-tool sealing-elements.

SM-35-C/SM-35-G: PPS filled PTFE reinforced with carbon fibers and proprietary filled for improved mechanical properties. These compounds extend the application of fluoropolymers to areas with higher pressure and temperature than previously provided by standard PTFE filled products. These materials are designed for seals of all sorts, compressor component wear pads, back-up rings, and applications where PTFE tends to cold flow or extrudes under heat and pressure; recommended for temperature service up to 575°F in the presence of extreme loads up to 10,000 psi.

JE-001: PTFE alloyed with Polyetheretherketone polymers and reinforced with proprietary fibers. This alloy is designed for ultimate performance in extreme conditions of temperature and pressures, offering maximum performance under compression for specialty seals, oil-tool sealing-elements, ball valve seats, compressor wear rings, and medium pressure bearings. **JE-001** offers the chemical resistance of PTFE, elastomeric type compliance, and the thermal resistance of PEEK.

Typical Modulus Retention As A Function Of Temperature





**Summary Of Typical Properties
– Alflon Series Material –**

	Properties	Units	Test Method	SM-550-TFM	SM-650-HT	SM-695-01	A-4025-G	SM-35-C	SM-35-G	JE001
Physical	Specific Gravity		ASTM D-792	2.28	1.98	2.27	2.1	2.28	1.8	1.77
	Water Absorption									
	24 hours		ASTM D-570	0.8%	0.28%	0.05%	0.001%	0.001%	0.001%	0.001%
	48 hours		ASTM D-570	0.028%	0.5%		0.001%	0.001%	0.001%	0.001%
Mechanical	Tensile Strength @ 75°F	psi	ASTM D-638	1,350	2,180	2,700	3,200	1,750	1,750	3,400
	Tensile Modulus	psi	ASTM D-638	330,000	248,000	650,000	820,000	900,000	110,000	180,000
	Tensile Elongation	%	ASTM D-638	13.3%	4.00%	24.00%	95.00%	3.50%	3.50%	15.00%
	Flexural Strength	psi	ASTM D-790	2,800	4,800	2,300	2,100	3,700	3,700	8,500
	Flexural Modulus	psi	ASTM D-790	590,000	590,000	325,000	190,000	190,000	190,000	560,000
	Izod Impact Strength Notched	ft*lb/in	ASTM D-256	1.32	No Break	2	1.8	1.4	1.4	1.8
	Compressive Strength	psi	ASTM D-695	4,700	8,200	3,600	3,000	7,300	7,300	12,600
	Hardness Shore D		ASTM-D-785	70	76	58	63	73	73	77
Rockwell R		ASTM-D-785	n/a	n/a	2.7	3.2	2.8	2.5	4.3	
Thermal	HDT (F) @ 264psi	F°	ASTM D-648A	348	445	270	300	340	385	400
	Coefficient of Linear Expansion	10 ⁻⁵ in/in*F°	ASTM C- 518	2.46	3.71	1.4	5	3.4	3.4	2.3
	Continuous Use Temperature	F°	ASTM D-696	550	600	650	500	500	550	580

To be best of our knowledge the information contained herein is accurate. However, neither Symmtek Polymers LLC, nor its affiliates assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability and whether there is any infringement of patents is the sole responsibility of the user.

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Corrosion resistance charts will be sent upon request. If your application demands other fillers or reinforcements different than those listed as standard, Symmtek can provide custom molded compounds to meet your specific needs.