

COMPATIBILITY TESTING IN AEROSPACE FLUIDS

Compound No./Material Name: ARLON® 3000 XT	Material Description: Enhanced PEEK	Manufacturing Method: Injection Molded
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DESCRIPTION (ASTM STANDARDS)	RESULTS	
	Arлон® 3000 XT	PEEK
Original Properties		
Hardness, Type D, Points (D2240)	90	88
Tensile Strength @ Yield, psi [MPa] (D638)	17,800 [122.73]	15,000 [103.42]
Tensile Strength @ Break, psi [MPa] (D638)	17,500 [120.66]	13,700 [94.46]
Elongation @ Break, % (D638)	9 – 20	115 – 300
Fluid Aging		
70 Hrs. @ 160°F (71°C), In AMS-3020 (ARM 201)		
Hardness Change, Type D, Points (D543)	-1	-1
Tensile Change @ Yield, % (D543)	0	1
Tensile Change @ Break, % (D543)	2	-4
Elongation @ Break, % (D543)	7 – 7.5	30 – 100
Volume Change, % (D543)	2	1
Weight Change, % (D543)	1	0
70 Hrs. @ 160°F (71°C), In MIL-PRF-83282		
Hardness Change, Type D, Points (D543)	-1	-2
Tensile Change @ Yield, % (D543)	1	1
Tensile Change @ Break, % (D543)	-1	-2
Elongation @ Break, % (D543)	14 – 22	30 – 110
Volume Change, % (D543)	0	0
Weight Change, % (D543)	0	0
70 Hrs. @ 160°F (71°C), In MIL-H-87257		
Hardness Change, Type D, Points (D543)	-2	-2
Tensile Change @ Yield, % (D543)	1	1
Tensile Change @ Break, % (D543)	1	-1
Elongation @ Break, % (D543)	7 – 25	100 – 225
Volume Change, % (D543)	0	0
Weight Change, % (D543)	0	0

Note

Unless otherwise noted, all tests performed on ASTM D638 Type I Dumbbells

Arлон 3000 XT is patent pending. Arлон® 3000 XT by Greene, Tweed based on VESTAKEEP®, an Evonik product

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Material Description:

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Manufacturing Method:

Injection Molded

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	Arлон® 3000 XT	PEEK
Original Properties		
Hardness, Type D, Points (D2240)	90	88
Tensile Strength @ Yield, psi [MPa] (D638)	17,900 [123.42]	15,000 [103.42]
Tensile Strength @ Break, psi [MPa] (D638)	17,600 [121.35]	13,800 [95.15]
Elongation @ Break, % (D638)	10 – 21	110 – 290
Fluid Aging		
70 Hrs. @ 160°F (71°C), In Skydrol V		
Hardness Change, Type D, Points (D543)	-2	1
Tensile Change @ Yield, % (D543)	-1	1
Tensile Change @ Break, % (D543)	-2	-3
Elongation @ Break, % (D543)	5 – 21	55 – 270
Volume Change, % (D543)	0	0
Weight Change, % (D543)	0	0

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Hardness, Type D, Points (D2240)	90	88
Tensile Strength @ Yield, psi [MPa] (D638)	17,900 [123.42]	14,900 [102.73]
Tensile Strength @ Break, psi [MPa] (D638)	17,500 [120.66]	13,400 [92.39]
Elongation @ Break, % (D638)	16 – 24	60 – 250
Fluid Aging		
70 Hrs. @ 160°F (71°C), In Hyjet IV		
Hardness Change, Type D, Points (D543)	0	-1
Tensile Change @ Yield, % (D543)	-1	1
Tensile Change @ Break, % (D543)	0	2
Elongation @ Break, % (D543)	5 – 14	35 – 315
Volume Change, % (D543)	0	0
Weight Change, % (D543)	0	0
70 Hrs. @ Room Temperature, In Reference Fuel B		
Hardness Change, Type D, Points (D543)	-2	0
Tensile Change @ Yield, % (D543)	-2	1
Tensile Change @ Break, % (D543)	-1	3
Elongation @ Break, % (D543)	4 – 26	85 – 300
Volume Change, % (D543)	0	0
Weight Change, % (D543)	0	0
70 Hrs. @ Room Temperature, In Reference Fuel C		
Hardness Change, Type D, Points (D543)	-1	-2
Tensile Change @ Yield, % (D543)	0	1
Tensile Change @ Break, % (D543)	0	3
Elongation @ Break, % (D543)	16 – 27	30 – 300
Volume Change, % (D543)	0	0
Weight Change, % (D543)	0	0

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Original Properties		
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Tensile Strength @ Yield, psi [MPa] (D638)	17,800 [122.73]	15,200 [104.80]
Tensile Strength @ Break, psi [MPa] (D638)	17,500 [120.66]	14,000 [96.53]
Elongation @ Break, % (D638)	8 – 30	60 – 300
Fluid Aging		
70 Hrs. @ 347°F (175°C), In AMS 3021 (Hatco 7700)		
Hardness Change, Type D, Points (D543)	0	-1
Tensile Change @ Yield, % (D543)	-1	-5
Tensile Change @ Break, % (D543)	-1	-2
Elongation @ Break, % (D543)	5 – 18	55 – 330
Volume Change, % (D543)	0	0
Weight Change, % (D543)	0	0

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