

Aerospace standard SAE AS1701

Class I:	-54°C/+232°C usage: general purpose: Ti, Al, low/high alloy steels MoS2 + organic heat cure (30 min./200°C) thermal stability: up to 232°C corrosion resistance: pass 100 hrs.
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Molykote candidate: **3400A AERO**

General technical requirements:

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3,1	no silver or its compounds, lead , halogenated solvents		
3.3.1	surface treatment of parts: see table 2		
3,4	coating thickness: 5.1/12.7 µm	Nonferrous material Ferrous material	ASTM D 1400 ASTM D 1186
3,5	film adhesion	ASTM D 3359 Method B	
3.5.1	fluid resistance	ASTM D 2510 procedure C	
	fluids:	ASTM D 1141 vol.31 (substitute ocean water) (proc. A ?) MIL-A-8243 (anti-icing fluid) VV-D-1078 (damping fluid, silicone based) MIL-PRF-83282 (synthetic hydraulic fluid fire resistant) MIL-PRF-23699 (synthetic turbine oil) MIL-PRF-7808 (synthetic turbine oil) MIL-DTL-5624 (aviation turbine fuel, kerosene JP4/JP5) Methanol (O-M-232) + reagent water (D 1193) 44/56 p/vol (proc. A ?)	
	no softening, blistering, discoloration, undercutting or loss of adhesion		
3,6	thermal stability	4 hrs. at max. temp. limit + cool to RT + film adhesion (3.5) & corr. res. (3.10) 3 test panels - no flaking, cracking, or peeling	
3,7	vacuum stability	not required	
3,8	shock sensitivity to liquid oxygen	not required	
3,9	film appearance	visual examination with min. 10x magnification lamp (min. power) before and after thermal stability test (3.6) - no cracks, scratches, blisters	
3.10	corrosion resistance	100 hrs. in 5% SST no signs of substrate corrosion greater than 1/16 inch in diameter ASTM B 117 = DIN 50021	
3,11	coefficient of friction	ASTM D 2714 LFW1 oscillating static coefficient of friction: 0.03/0.13	
3,12	wear requirements	(Pin & Vee Falex test machine)	
3.12.1.1	endurance life	average 450 min. (no single test < 390)	ASTM D 2625
3.12.1.2	load carrying capacity	average > 2500 lbf (no single test < 2250)	ASTM D 2625

Quality assurance:

4.1.1	qualification tests:	product manufacturer is responsible for passing all qualification tests	
4.1.2	quality conformance tests:	each lot shall pass the tests as applicable to the class:	
		1) coating thickness	(3.4)
		2) film adhesion	(3.5) also (3.5.1) ?
		3) film appearance	(3.9)
		4) wear life requirements	(3.12)

Test specimen preparation for Falex test:

degreasing

phosphating with DOD-P-16232 Type M or Z class3 = Hebrobond M 98
apply by spraying
thickness of the AFC between 5.1/12.7 μm
curing 30 min. at 200°C

questions:

preparation of panels (pre-treatment)?

coefficient of friction 3.11 - load?

quality tests: film adhesion, only 3.5 and not 3.5.1?