

Aerospace standard SAE AS1701

Class II:	-54°C/+232°C usage: general purpose: Ti, Al, low/high alloy steels MoS2 + organic air dry thermal stability: up to 232°C corrosion resistance: pass 72 hrs.
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Molykote candidate: **3402-C** not possible, as 3402-C contains lead

General technical requirements:

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	ASTM D 1400
		Ferrous material	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 (p 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 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, etc	
3.10	corrosion resistance	72 hrs. in 5% SST	ASTM B 117 = DIN 50021
		no signs of substrate corrosion greater than 1/16 inch in diameter	
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 90 min. (no single test < 75)	ASTM D 26
3.12.1.2	load carrying capacity	average > 2500 lbf (no single test < 2000)	ASTM D 26

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

proc. A ?)
n
s. (3.10)
blisters
325
325