



ADDITIVE, AUTOMATIC TRANSMISSION, ANTI-SQUAWK FRICTION MODIFIER

WSS-M99C132-A1

1. SCOPE

The materials defined by this specification are the basic components for the automatic transmission friction modifier for anti squawk (NVH) phenomenon.

2. APPLICATION

These specifications were originally released for shifting clutch NVH issue in automatic transmissions. This material needs to be added to WSS-M2C938-A (Type A) ATF in 0.95ml / 1.0 lit ratio for optimized performance. Adding this material will result in reduction of static coefficient of friction by approx. 5-10% (depending on friction material used). This material will not have impact on dynamic coefficient of friction.

3. REQUIREMENTS**3.1 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS**

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.2 REQUIREMENTS

3.2.1	Viscosity, cSt at 100 °C (ASTM D445)	3.90 min
3.2.2	Density, g/cc at 15 °C (ASTM D 1475)	0.80 min
3.2.3	Flash Point (Pensky-Martens Closed Cup Method)	180 °C min
3.2.4	Squawk Test (for product mixed with new WSS-M2C938-A ATF) (GK test rig, BW 6510, D530-31 friction materials)	0.6N/mm ² , pressure

GK Rig Machine Setup Parameters

Apply Pressure:	4200 kPa/sec.
Sampling Frequency:	500 Hz (1000 Hz with 500 Hz filter)
Fill Volume:	700 mL +/- 5 mL

Date	Action	Revisions	Rev 0
2010 02 12	Activated		



Documents

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TEST DESCRIPTION

Test Conditions - Discrete Data Points			
Sliding Speed (m/s)	Speed (rpm)	Pressures (kPa)	Temp °F
0.005	1	97	40
0.011	2		
0.027	5		
0.055	10		
0.110	20		
0.165	30	241	90
0.220	40		
0.275	50		
0.412	75		
0.549	100		
0.824	150	369	120
1.098	200		
1.373	250		
1.647	300		

4. QUALITY CONTROL/SUPPLIER TESTING

Annual validation required on production sample. Validation is to be completed by the first week of the fifth month prior to a typical Job 1 date (Approximately 2 months prior to Job 1).

Supplier in-house friction test results are acceptable after concurrence with the Product engineering design & release / materials section.