



LUBRICANT, POLYALKYLENE GLYCOL (R-134a & R-1234yf)

WSS-M2C300-A2

1. SCOPE

This material specification defines the physical and chemical properties of a polyalkylene glycol-based synthetic lubricant to be used with HFC-134a.

2. APPLICATION

This specification was released originally for oils used in air conditioning compressors operating within the temperature range of -40°C to 125 °C.

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 SPECIFIC GRAVITY 0.95 - 1.05
(ASTM D 4052, 15.6/15.6 °C)

3.3 VISCOSITY
(ISO 3104/ASTM D 445)

At 40 °C 39 – 50 mm²/s
At 100 °C 9 – 9.3 mm²/s

3.4 WATER CONTENT 700 ppm, max
(ASTM D6304)

3.5 FLASH POINT 160°C min
(ISO 2592/ASTM D92)

3.6 POUR POINT -40 °C max
(ISO 3016/ASTM D97)

3.7 EVAPORATION LOSS 5.0 % max
(ASTM D 972, 24 h at
100 +/- 2 °C)

3.8 TOTAL ACID NUMBER 0.1 mg KOH/g, max
(ASTM D664)

3.9 LUBRICANT PAINT STAINING No softening, no discoloration
(FLTM BJ 126-01)

3.10 WEAR PREVENTIVE CHARACTERISTICS 3300 N, min
(ASTM D3233)

Date	Action	Revisions	Rev. 00
2015 05 26	Released		



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3.11 SEALED TUBE STABILITY TEST

(ANSI/ASHRAE Standard 97-1989,
14 d at 175 +/- 2 °C with HFO-1234yf and HFC-134a)

Change in Viscosity at 40 °C
(ASTM D445)

10 mm²/s, max

Test Method:

- After aging, visually inspect the test tube contents for liquid discoloration and any deposits formation. Visually inspect the metal coupons for discoloration or evidence of corrosion and/or copper plating.
- Analyze HFO-1234yf/PAG and HFC-134a/PAG using the Selective Ion Electrode Method for ppm of fluoride and chloride.

3.12 REFRIGERANT COMPATIBILITY

HFO-1234yf &
HFC-134a

3.13 LUBRICANT ADDITIVE COMPOUND

ND-12

3.14 CONSISTENCY

This material shall be free from acid, alkali, or other foreign matter. It must also be free from any objectionable odors.

4. GENERAL INFORMATION

The information given below is provided for clarification and assistance in meeting the requirements of this specification. Contact gmfs@ford.com for questions concerning Engineering Material Specifications.

5. SUMMARY OF REVISIONS

