WINDSHIELD WASHER FLUID, METHANOL, CONCENTRATE **WSB-M8B16-A2**

WINDSHIELD WASHER FLUID, METHANOL, PRE-DILUTED, INITIAL FILL **WSB-M8B16-A3**

1. SCOPE

A2 The material defined by this specification is a methanol based solution containing surfactants and other additives for improved cleaning efficiency and freeze point depression. The material defined by this specification is a concentrated product; and is diluted with water at the assembly plant. Deionized water is preferred.

A3 The material defined by this specification is a methanol based solution containing surfactants and other additives for improved cleaning efficiency and freeze point depression. The material defined by this specification is a water dilution of the material defined in A2. See requirements in Table 1 for freeze point temperature by region.

2. APPLICATION

The concentrated material, A2, must be diluted with water prior to use in vehicle wiper/washer systems. The diluted material, A3, is intended for locations that lack equipment to dilute the concentrate, have poor water quality, or chose to avoid mixing altogether. The dilution ratio is established to meet the freeze point requirement for the market where the vehicle is sold.

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).

3.1.1 In addition to the control plan, the supplier and affected Material Engineering activity shall establish mutually agreed upon frequency of testing for the ongoing product verification plan and include in Supplement A.

3.2 APPROVAL INFORMATION

This specification was released to allow this material to be purchased by Ford Purchasing for use in a Ford facility. The specification number is also the part number in WERS. Post production uses a different format for WERS

The directions to dilute the concentrate with water to achieve the specified freezing point must be clearly marked on all deliveries to the Ford facility. The freezing point of pre-diluted initial fill must be clearly marked on all deliveries.

Date	Action	Revisions	Rev. 6
2013 07 30	Revised	See Summary of Revisions	C. McComb, NA
2010 06 14	Revised	Editorial changes only, See Summary of Revisions	C. McComb, NA
1992 11 11	Released	A2 Released 1992 11 11. A3 Released 1994 11 17	R.D. Moore, NA

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3.3 COLOR (Visual) — Clear blue or as agreed to by The Ford facility

3.4. SPECIFIC GRAVITY AT 15.6 °C (ASTM D891) — Report

Specific Gravity is dependent on temperature and supplier's concentration/composition. Since multiple suppliers will be approved to this specification, refer to the Ford Approved Source List or supplier's MSDS or certificate of analysis. Typical specific gravity is 0.80 for the concentrate and 0.94 for the pre-diluted.

3.5 FREEZE POINT OF DILUTED WINDSHIELD WASHER FLUID
(ASTM D1177)

	Less than
North America Market (FNA)	-30 °C
South America Market (FSAO)	0 °C
Europe (FoE) Market	-20 °C
Asia Pacific and Africa Market (APA)	0 °C
China Market	-40 °C

3.6 PERFORMANCE REQUIREMENTS

Materials being evaluated for initial approval must meet WSS-M14P19-A or latest revision.

4. GENERAL INFORMATION

The information given below is provided for clarification and assistance in meeting the requirements of these specifications. Contact gmfs@ford.com for questions concerning Engineering Material Specifications. Windshield washer fluid (WWF) has the following typical properties.

4.1 WSB-M8B16-A2

4.1.1 Non-Volatiles, (ASTM D1353) — < 3.2 mg/100mL

4.1.2 Viscosity (ASTM D445)

4.1.2.1 At 25 °C — 0.726 - 0.766 mm^2/s

4.1.2.2 At - 17.8 °C — 1.46 - 1.62 mm^2/s

4.1.3 Suspended Solids (ASTM D5907, 1 micron polycarbonate filter, 1 gallon of fluid, except drying temperature of 65 - 70 °C) — < 1.0 mg

4.1.4 Chemical Composition

Component	% by Weight
Methyl Alcohol	> 90
Detergent/Surfactants	< 5
Alkalinity Source	< 2
Rust Preventative Source	< 2
Water	< 3

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