



LUBRICANT, ASSEMBLY AID FOR ELASTOMERS, QUICK DRYING

WSS-M99C45-A4

1. SCOPE

The material defined by this specification is a quick-drying, water-based surfactant and polymer mixture. When dry, the material leaves a slightly tacky surface with no appreciable residue.

2. APPLICATION

This specification was released originally as an assembly aid to lower the insertion efforts for exhaust isolators and rubber hoses. The quick drying property is particularly suitable for hoses where initial pressurization and blow off requirements apply.

2.1 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. Material performance and selection is determined by line trials and design verification testing on the components for which it is used.

Approved Source: International Products Corp. (GSDB: BS14C)
Material Trade Name: P-80 Grip-it
NA Tox Number: 173660

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 COLOR
(Visual)

Clear

3.3 DENSITY
(ASTM D 1475)

0.995 - 0.999 g/mL

3.4 pH
(ASTM E 70)

9.8 – 11.3

4. GENERAL INFORMATION

The information given below is provided for clarification and assistance in meeting the requirements of this specification. Material approved to this specification has the following typical properties.

Note: This material is not designed to be diluted with water. Dilution will decrease lubricity and may alter the typical properties listed below.

4.1 TOTAL SOLIDS
(ASTM D 460, Method A)

< 5.0%

Date	Action	Revisions	Rev. 1
2011 05 17	Revised	See Summary of Revisions	A. Wiedenohl, NA
2006 05 31	Activated		G. Macna, NA



- 4.2 VISCOSITY AT 25 °C**
(Brookfield Viscometer, #2 spindle at 100 RPM)

<100 cP

- 4.3 LUBRICITY**
(Insertion force, 5/8 inch ID heater hose over rigid PVC)

Laboratory tests show up to a 40% reduction in insertion force when compared to rubber hose without lubricant.

- 4.4 DRYING CHARACTERISTICS**

The reference drying time for this material is at least 20 minutes. The actual drying time depends on the amount applied and the surrounding environment.

- 4.5 ELASTOMER COMPATIBILITY,**
(ISO 1817/ASTM D471, 22 hours immersion at 23 +/- 2 °C)

	Nitrile	Neoprene	Butyl	EPDM	Viton	Silicon	Natural
Volume Swell in lubricant	0.5%	0.7%	0.3%	0.4%	0.2%	0.5%	0.3%
Volume Swell in Water	0.1%	0.1%	-0.2%	0.0%	0.0%	0.1%	0.1%
Shore A Durometer change in lubricant	-1.9%	-3.3%	1.0%	0.6%	0.4%	-1.1%	-3.5%

- 4.6 POLYMER COMPATIBILITY**

This lubricant may cause stress cracking when in contact with acrylic and polycarbonate. Use ASTM D543 to evaluate specific grades and strain levels.

- 4.7 METAL COMPATIBILITY**
(After 24 hours immersion at 25 °C)

	Copper (C11000)	Steel (SAE J403 1018)	Aluminum (UNS A911000)	Brass (C36000)	304 Stainless Steel
Mass change in lubricant	-0.1%	0.0%	0.0%	0.0%	0.0%
Appearance change in lubricant	Shiny, etched	Red rust	Darkened	Shiny, etched	No change
Mass change in water	0.0%	0.0%	0.0%	0.0%	0.0%
Appearance change in water	Stained, darkened	Red rust	Slightly darkened	No change	No change

5 SUMMARY OF REVISIONS

2011 05 17 Updated Title. Moved lot certification tests to requirements and moved material properties to General Info. Added more elastomer, polymer, and metal compatibility information. Added drying and lubricity information.