



## LUBRICANT, ASSEMBLY AID FOR ELASTOMERS, GENERAL PURPOSE

WSE-M99C45-A2

### 1. SCOPE

The material defined by this specification is an emulsion of synthetic ester and water.

### 2. APPLICATION

This specification was released originally for lubricant used to facilitate the assembly of rubber parts such as coolant hose, vacuum tubing, "O" rings, grommets, and bushings.

#### 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

NA Tox. Number: 048796

EU Tox Number: 185380

SA Tox. Number: 181170

APA Tox. Number: 180265

### 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)

Milky White

#### 3.3 pH (ASTM E 70)

7.5 – 9.5

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

100 - 200 cP

### 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 DENSITY (ASTM D 1475)

0.970 - 0.980 g/mL

| Date       | Action   | Revisions                                                  | Rev. 2          |
|------------|----------|------------------------------------------------------------|-----------------|
| 2011 05 17 | Revised  | See Summary of Revisions                                   | A. Wedepohl, NA |
| 2004 03 02 | Revised  | Para 3.0 inserted; paras 3.1, 3.2, 3.3, 3.12 and 4 deleted |                 |
| 1991 09 11 | Released | NE01-E-10127076-023                                        |                 |



**4.2 TOTAL SOLIDS**  
(ASTM D 460, Method A)

20%

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

Laboratory tests show up to a 70% 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 1 hour. 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             | 0.8%    | 1.4%     | 0.1%  | 0.2%  | 0.1%  | 0.2%    | 1.3%    |
| Volume Swell in Water                 | 0.1%    | 0.3%     | -0.2% | -0.2% | 0.0%  | 0.1%    | 0.1%    |
| Shore A Durometer change in lubricant | -1.4%   | -0.8%    | -0.7% | -1.5% | -0.7% | -3.1%   | -5.8%   |

**4.6 POLYMER COMPATIBILITY**

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

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

|                                | Copper<br>(C11000) | Steel<br>(SAE J403 1018) | Aluminum<br>(UNS A911000) | Brass<br>(C36000) | 304 Stainless<br>Steel |
|--------------------------------|--------------------|--------------------------|---------------------------|-------------------|------------------------|
| Mass change in lubricant       | 0.0%               | 0.0%                     | 0.0%                      | 0.0%              | 0.0%                   |
| Appearance change in lubricant | Mottled            | No change                | No change                 | Mottled           | 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         | Mottled           | 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.