Ford Motor Company

ENGINEERING MATERIAL SPECIFICATION

Material Name	Specification Number
PHOSPHATE SOLUTION, ZINC, INITIAL FILL	**WSS-M3B77-A1**
PHOSPHATE SOLUTION, ZINC, FEED MATERIAL	**WSS-M3B77-A2**

1. SCOPE

The materials defined by these specifications are the basic components for the automotive zinc phosphating process, containing zinc, nickel, and manganese.

2. APPLICATION

These specifications were originally released for tri-cation phosphate bath materials used in automotive assembly plants.

WSS-M3B77-A1: This specification is used for the initial fill of dip or spray phosphate systems.

WSS-M3B77-A2: This specification is used for feed materials to replenish phosphate systems. Feed materials per this specification must not contain accelerator components.

3. REQUIREMENTS

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

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

3.4 MATERIAL COMPATIBILITY

The supplier of this material shall keep abreast of changes in technology of related materials e.g., sealers and adhesives, which may affect the compatibility and performance of this product. The supplier shall notify the appropriate Ford Product Materials Engineering Office in writing when incompatibility is anticipated.

3.5 COMPOSITION

Supplier must maintain the following characteristics to a maximum tolerance of plus or minus 10% of the initial sample or as reported with the initial sample. All other essential components must be reported with the initial sample and maintained as part of the Control Plan as required in 3.0.

Date	Action	Revisions
2003 03 13	Revised	Para 3.0 Inserted; Para 3.1, 3.2, 3.3, 3.7, 3.8, 4 Deleted
2000 02 14	Activated	N. Chamberlain/A. Reilly

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3.5.1 Chemical Composition

Zinc (Zn),	Initial Sample +/- 5%
Manganese (Mn),	Initial Sample +/- 5%
Nickel (Ni),	Initial Sample +/- 5%
Phosphate as P_2O_5,	Initial Sample +/- 5%
Nitrate as NO_3,	Initial Sample +/- 5%
Fluoride (F),	Initial Sample +/- 5%

Any other essential components of the formulation must also be noted in the Initial Sample Report of the phosphate solution (excluding accelerator).

3.5.2 Density, kg/L at 25 °C (ASTM D 1475) — Initial Sample +/- 0.03

For liquid material, density of the material as supplied. For powder, density of an aqueous solution (concentration to be defined by supplier and noted in the Initial Sample Report).

3.6 RESISTANCE PROPERTIES

The material defined by this specification must be used with a phosphate system and in conjunction with the phosphate system must meet the requirements of WSS-M3P1-D.

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