

ENGINEERING MATERIAL SPECIFICATION

Material Name

Specification Number

PHOSPHATE SOLUTION, ZINC, MAKE UP
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PHOSPHATE SOLUTION, ZINC, MAKE UP, FOR
PRECOATED STEEL

ESK-M5B369-A
ESK-M5B369-A2
ESK-M5B369-A3

1. SCOPE

The materials defined by these specifications are aqueous solutions containing essentially zinc phosphate.

2. APPLICATION

These specifications were released originally for materials used as make up materials in dip or spray phosphate equipment. These materials are used in combination with ESK-M5B368-A Phosphate Solution, Zinc, Start up, ESK-M5B370-A Phosphate Solution, Zinc, Activator, S-M5B4514-A Phosphate Solution, Zinc, Accelerator.

ESK-M5B369-A3 is specifically designed for applications with high content of Zn-coated steel.

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 CHEMICAL COMPOSITION

	ESK-M5B369-A	ESK-M5B369-A2	ESK-M5B369-A3
Zinc as Zn	7.60 +/- 0.5 %	7.92 +/- 0.5 %	5.99 +/- 0.5 %
Manganese as Mn	1.60 +/- 0.2 %	1.54 +/- 0.2 %	1.65 +/- 0.2 %
Nickel as Ni	0.45 +/- 0.1 %	0.46 +/- 0.1 %	0.47 +/- 0.1 %
Phosphate as P ₂ O ₅	25.20 +/- 2.0 %	25.20 +/- 2.0 %	25.60 +/- 2.0 %
Fluoride as F*)	0.80 +/- 0.1 %	0.37 +/- 0.1 %	0.86 +/- 0.1 %
Nitrate as NO ₃	1.00 +/- 0.1 %	2.20 +/- 0.2 %	1.28 +/- 0.1 %
Iron as Fe	< 0.1 %	< 0.1 %	< 0.1 %

* Determination with Fluoride selective electrode after addition of TISAB

Date	Action	Revisions
2002 08 29	Revised	Updated and renumbered
1995 04 12	EP00E10460357000	Complete revise, -A2 and -A3 added K Wolters
1987 12 18	SM/EQ 1579 TP	Release

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3.3 TITRATION

ESK-M5B369-A	5.8 +/- 0.5 mL
ESK-M5B369-A2	5.9 +/- 0.5 mL
ESK-M5B369-A3	5.9 +/- 0.5 mL

Titrate 10 mL of the 1 % by weight solution with 0.1 n sodium hydroxide (NaOH). Use phenolphthalein indicator.

3.4 pH VALUE 1 % SOLUTION BY VOLUME AT 20 °C

ESK-M5B369-A	2.6 +/- 1.0
ESK-M5B369-A2	2.6 +/- 0.5
ESK-M5B369-A3	2.7 +/- 0.5

3.5 DENSITY (ASTM D 1475)

ESK-M5B369-A	1.46 +/- 0.05 g/mL
ESK-M5B369-A2	1.48 +/- 0.05 g/mL
ESK-M5B369-A3	1.41 +/- 0.05 g/mL

4. GENERAL INFORMATION

The information given below is provided for clarification and assistance in meeting the requirements of this specification.

4.1 The phosphate system released by this specification consists of the following materials:

4.1.1	Phosphate Solution, Zinc, Activator	ESK-M5B373-A or SK-M5B9613-A
4.1.2	Phosphate Solution, Zinc, Precleaner	ESK-M5B374-A
4.1.3	Phosphate Solution, Zinc, Alkaline Cleaner	ESK-M5B371-A or ESK-M5B372-a
4.1.4	Phosphate Solution, Zinc, Cleaner Additive	ESK-M5B358-A
4.1.5	Phosphate Solution, Zinc, Start Up	ESK-M5B368-A
4.1.6	Phosphate Solution, Zinc, Activator	ESK-M5B370-A
4.1.7	Phosphate Solution, Zinc, Accelerator	S-M5B4514-A