



ENGINEERING MATERIAL SPECIFICATION

Material Name

Specification Number

PRIMER, WATERBORNE AUTODEPOSITION, BLACK, 100 C, "0" VOC	ESB-M64J27-A1
INITIAL MAKEUP ADDITIVE	ESB-M64J27-A2
ACID CONTROL ADDITIVE	ESB-M64J27-A3
OXIDATION POTENTIAL CONTROL ADDITIVE	ESB-M64J27-A4
PRIMER, WATERBORNE AUTODEPOSITION, BLACK, 160 C, LOW VOC	ESB-M64J27-B1

1. SCOPE

The materials defined by these specifications are black waterborne chemical coatings, autodeposited, and associated additive components. The ESB-M64J27-A1 coating is formulated to cure at 100 C minimum metal temperature, and has zero V.O.C. (Volatile Organic Content). The ESB-M64J27-B1 coating is formulated to cure at 160 C minimum metal temperature and has a VOC of less than 0.24 kg/L. Both coatings possess excellent corrosion resistance, adhesion, flexibility, and hardness. Application is by immersion.

2. APPLICATION

These specifications were released originally for use on seat tracks, leaf springs and other underbody components and were originally intended to replace phosphate and oil protective films.

Autodeposition coatings are applied over thoroughly cleaned low carbon sheet steels, zinc, zinc/iron, zinc/nickel, zinc/alloy coated mild steel, steel tubing and cast iron parts. No phosphate or other conversion precoating is required.

ESB-M64J27-A1 & B1 are used to make up the initial bath, to replenish bath solids, and to restore solids lost when purging is periodically performed as the bath ages and contaminants accumulate.

ESB-M64J27-A2 is used to adjust the bath only when the bath is initially made up (not when it is replenished).

ESB-M64J27-A3 is used to adjust the bath for acidity, reaction rate, and also affects the paint's adhesion to substrate. When the bath is replenished, more of this activator must be added in direct proportion to the amount of ESB-M64J27-A1 & B1 primer added.

ESB-M64J27-A4 is used to control the dissolved iron content of the bath and to prevent the buildup of ferrous ion in the bath.

3. REQUIREMENTS

The Autodeposition Coating Chemical, ESB-M64J27-A1 & B1, shall meet the requirements of this specification. The additive materials, ESB-M64J27-A2 through ESB-M64J27-A4, shall meet the requirements detailed in paragraphs 3.3 and 3.4. These requirements apply to both laboratory prepared and plant autodeposition tank materials.

Date	Release No.	Release/Revision
1993 07 29	NB00E1043064110	Revised para 2, updated para 3.8 JAW Faunt
1991 10 08	NB00E10014493001	Revised & Updated, added -B1 PAK MP
1987 07 24	CAR1-DR108433	Released PAK

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3.1 STATISTICAL PROCESS

Suppliers must conform to the requirements of Ford Quality System Standard Q-101. A mutually acceptable Control Plan as described therein is required for material/source approval. Appropriate statistical tools must be used to analyze process/product data so that variation in the final product is continuously reduced.

3.2 MATERIAL COMPATIBILITY

The supplier of this material shall keep abreast of changes in the technology of related materials which may affect the compatibility and performance of this product. In the event of adverse performance, the supplier shall notify this Ford Engineering Product Office in writing.

3.3 COMPOSITION

3.3.1 Non-Volatile, Wt. % (FLTM BI 102-01)

ESB-M64J27-A1 Autodeposition Coating Chemical (Latex and Pigment Suspension)	37.5 +/- 2.0
ESB-M64J27-B1 Autodeposition Coating Chemical (Latex and Pigment Suspension)	30.0 +/- 2.0
ESB-M64J27-A2 Initial Makeup Additive (Starter) (Ferric Fluoride Solution)	NA
ESB-M64J27-A3 Acid Control Additive (Activator) (Hydrofluoric Acid)	NA
ESB-M64J27-A4 Oxidation Potential Control Additive (Hydrogen Peroxide)	NA

3.4 PHYSICAL PROPERTIES

3.4.1 Density, kg/L at 15.6 C (ASTM D 1475)

ESB-M64J27-A1 Autodeposition Coating Chemical	1.18 +/- 0.05
ESB-M64J27-B1 Autodeposition Coating Chemical	1.02 +/- 0.05
ESB-M64J27-A2 Initial Makeup Additive	1.06 +/- 0.02
ESB-M64J27-A3 Acid Control Additive	1.02 +/- 0.02
ESB-M64J27-A4 Oxidation Potential Control Additive	1.13 +/- 0.10

3.4.2 Flashpoint, C, min (ASTM D 56)

All non-flammable