



Engineering Material Specification

Material Name

ENAMEL, SYNTHETIC - BLACK - AIR DRY

~~ENAMEL, SYNTHETIC - BLACK - AIR DRY - EXEMPT SOLVENT~~

Specification Number

ESA-M1J53-A

~~ESA-M1J74-A~~

1. SCOPE

The material defined by this specification is a black, air dry, synthetic enamel; formulated to dry at the same general rate as nitrocellulose lacquer.

2. APPLICATION

This specification was released originally for material used for painting automotive chassis and miscellaneous small parts. Exempt solvent material is used when conformance to the legal requirements of air pollution control authorities is mandatory for an assembly plant or other painting facility.

3. REQUIREMENTS

(Applicable to both ESA-M1J53-A and ~~ESA-M1J74-A~~, unless otherwise specified.)

3.1 COMPOSITION

3.1.1 Non-Volatile, min (FLTM BI 2-1)

22%

3.1.1.1 Pigment

10% min of non-volatile portion, consisting of carbon black and fillers as required.

3.1.1.2 Resin

Oil modified alkyd containing 50 - 55% glycerol phthalate. Up to 10% phenolic resin is permitted together with driers and inhibitors as required.

3.1.2 Volatile (ESA-M1J53-A only)

A mixture of aliphatic and aromatic hydrocarbons to obtain the necessary spray properties and flash-off time.

~~3.1.3 Exempt Solvent ESA-M1J74-A~~

~~The volatile portion shall not be photochemically reactive as defined below:~~

~~A photochemically reactive solvent is any solvent with an aggregate of more than 20% of its total volume composed of the chemical compounds classified below or which exceeds any of the following individual percentage composition limitations, referred to the total volume of solvent:~~

Date	Para. No.	Revisions	Approval
			C. L. Lupton 11-30-78
1979 01 10		Metricated and Retyped CAN 2 823385	E. P. Francis 11-30-78
1968 11 13		Released	

1978 11 21
Eng Res 3948-a
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- A combination of hydrocarbons, alcohols, aldehydes, esters or ketones having an olefinic or cycloolefinic type of unsaturation - 5%.
- A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene - 8%.
- A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene - 20%.

Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the above groups of organic compounds, it shall be considered as a member of the most reactive chemical group, that is, that group having the least allowable percent of the total volume of solvents.

3.1.4 Specific Composition (ESA-M1J74-A material only)

3.1.4.1 Volatile Portion

Suppliers shall furnish certification of conformance to Section 3.1.3 of this specification to Ford Motor Company Purchasing and/or Quality Control for each color supplied.

3.2 PHYSICAL PROPERTIES

3.2.1	Viscosity (FLTM BI 11-1)	12 - 14 s
3.2.2	Weight Per Volume, min	6.7 lb/gal (0.8 kg/l)
3.2.3	Hiding Power, Wet (FLTM BI 1-1)	

The material shall have a 12-cryptometer reading with a 0.002 in (51 μ m) wedge at a viscosity of 12 - 14 s.

3.3 PANEL PREPARATION

Spray one coat (0.0004 - 0.0006 in (10 - 15 μ m) dry film thickness) over clean bare steel panels. Separate panels shall be (1) air dried at $23 \pm 2^{\circ}\text{C}$, (2) baked 2 h at 121°C , and (3) baked 1 h at 205°C .

3.4 APPEARANCE

3.4.1	Color	Black
3.4.2	Gloss (FLTM BI 10-1)	50 - 70

11-52-79

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