

METRIC

MIL-DTL-24441/19B(SH)

19 May 1999

SUPERSEDING

MIL-P-24441/19A(SH)

23 July 1991

DETAIL SPECIFICATION SHEET

PAINT, EPOXY-POLYAMIDE, ZINC PRIMER, FORMULA 159, TYPE III

This specification is approved for use by the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification and MIL-DTL-24441.

FORMULA: This formula covers a cathodic protection zinc metal pigmented epoxy-polyamide paint designated Navy Formula 159, Type III for interior or exterior use. The paint shall consist of the ingredients specified in the quantities specified.

COMPONENT A

Ingredients	Kilograms	Pounds
Thixatrobe ^{1/}	---	---
Polyamide ^{2/}	3.63	8.0
Polyamide adduct ^{3/}	48.08	106.0
Naphtha ^{4/}	13.61	30.0
Paint thinner ^{5/}	5.99	13.2

COMPONENT B

Ingredients	Kilograms	Pounds
Thixatrobe ^{1/}	---	---
Zinc pigment ^{6/}	86.84	1900.0
Epoxy resin ^{7/}	86.18	190.0
Naphtha ^{4/}	55.79	123.0
Paint thinner ^{5/}	26.63	58.7

See footnotes on next page

AMSC N/A

FSC 8010

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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QUANTITATIVE REQUIREMENTS: The paint shall meet the following quantitative requirements and the qualitative requirements of section 3 of the general specification. The components A and B shall be mixed 1:4 by volume for mixed component tests. Tests shall be performed in accordance with the general specification.

Requirements	Component A		Component B		Mixed components 8/	
	Min	Max	Min	Max	Min	Max
Pigment content, percent (%)	---	----	81.5	85.5	---	---
Volatiles, %	42.8	44.3	8.0	8.4	---	---
Nonvolatile vehicle, %	53.7	57.7	8.3	8.7	---	---
Kilograms per liter (kg/L) [pounds per gallon (lb/gal)]	0.87 (7.3)	1.01 (8.4)	3.30 (27.5)	3.40 (28.4)	---	---
Water, %	---	0.5	---	0.2	---	---
Flash point, °C (°F)	35.6 (96)	---	37.8 (100)	---	---	---
Consistency, grams	---	---	250	500	---	---
Set to touch, hours at 23°C (73°F)	---	---	---	---	---	2
Dry-hard, hours at 23°C (73°F)	---	---	---	---	---	8
Pot life, hours at 23°C (73°F)	---	---	---	---	4	---
Sag resistance, micrometers (mils)	---	---	---	---	300(12)	---
VOC, grams per liter (g/L) (lb/gal)	---	---	---	---	---	304 (2.5)

- 1/ The amount and type of thixatropes shall be selected by the manufacturer to meet all requirements of the general specification and this specification sheet. Thixatropes are a pigment for calculation purposes.
- 2/ GENAMID 2000, Henkel Corp.; UNIREZ 2810, Union Camp; AZAMIDE 600, AZ Products; ANCAMINE 507, Pacific Anchor Chemical Corp.; EPOTUF SF7791, Reichold Chemical.
- 3/ VERSAMID 280B75, Henkel Corp.; UNIREZ 2810, Union Camp; AZAMIDE 680B75, AZ Products; ANCAMINE 700B75, Pacific Anchor Chemical Corp.; EPOTUF SF7792, Reichold Chemical.
- 4/ Conforming to ASTM D 3734, type I. In the development of this product, AMSCO Super High Flash Naphtha was used.
- 5/ Conforming to TT-T-291, type I, grade A.
- 6/ Zinc No. 555, American Smelting & Refining; Zinc No. 422, New Jersey Zinc; or Intermediate No. 32 non-gassing, Pacific Smelting Company
- 7/ EPON 828, Shell Chemical Co.; ARALDITE 6010, Ciba-Geigy Corp.; DER 331, Dow Chemical Corp.; AZEPOXY 128, AZ Products; EPO-TUF 37-140, Reichold Chemical Corp.; Trichem 728, Trimont Chemicals; EPI-REZ 510, Celanese.
- 8/ Tests on mixed component shall consist of one volume of component A mixed with four volumes component B then reduced with the equivalent of 40 g/L (0.3 lb/gal) thinner.

Use of alternate ingredients in this formula must have prior approval of the Naval Sea Systems Command. Approval will be based on review of data demonstrating equivalent physical, chemical, and performance characteristics of paint manufactured with the proposed alternate material and the requirements as specified in 3.4.2 of MIL-DTL-24441. Paint incorporating the

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proposed alternate ingredient shall conform to all the requirements of this military specification sheet and the general specification.

CHANGES FROM PREVIOUS ISSUE: Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Preparing activity:
Navy - SH
(Project 8010-N105)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
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I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-DTL-24441/19B

2. DOCUMENT DATE (YYYYMMDD)
1999/05/19

3. DOCUMENT TITLE

PAINT, EPOXY-POLYAMIDE, ZINC PRIMER, FORMULA 159, TYPE III

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed)*

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME *(Last, First, Middle Initial)*

b. ORGANIZATION

c. ADDRESS *(Include Zip Code)*

d. TELEPHONE *(Include Area Code)*
(1) Commercial
(2) DSN
(if applicable)

7. DATE SUBMITTED
(YYYYMMDD)

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