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MIL-PRF-46081A  
5 August 1970  
SUPERSEDING  
MIL-C-46081(MR)  
15 May 1964

## PERFORMANCE SPECIFICATION

### COATING COMPOUND, THERMAL INSULATING (INTUMESCENT)

This specification is mandatory for use by all Departments and Agencies of the Department of Defense.

#### 1. SCOPE

1.1 This specification covers one type and one grade of modified epoxy intumescent thermal insulating compound for interior or exterior use.

#### 2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on the date of invitation for bids, or request for proposal form a part of the specification to the extent specified herein.

### SPECIFICATIONS

#### FEDERAL

- TT-P-143 - Paint, Varnish, Lacquer and Related Materials; Packaging, Packing and Marking of.
- TT-S-735 - Standard Test Fluids; Hydrocarbon.

#### MILITARY

- MIL-P-52192 - Primer Coating, Epoxy.

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## STANDARDS

## FEDERAL

Fed. Test Method Std. No. 141 - Paint, Varnish, Lacquer and Related Materials; Methods of Inspection, Sampling and Testing.  
Fed. Std. 595 - Colors.

(Copies of specifications, standards, drawings and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

## 3. REQUIREMENTS

3.1 Qualification. The coating compound furnished under this specification shall be a product which is qualified for listing on the applicable Qualified Products List at the time set for opening of bids (see 4.3.1 and 6.3). Any change in the formulation of a qualified product will necessitate its requalification. The material supplied under the contract shall be identical, within manufacturing tolerances, to the product receiving qualification.

3.2 Color. The coating shall be furnished in the Fed. Std. No. 595 color number specified in the contract or purchase order (see 6.2). When tested as in 4.4.3 it shall acceptably match the standard color chip in Fed. Std. No. 595.

3.3 Composition. The coating shall be furnished in 2 parts: part A (pigmented modified epoxy resin component) and part B (catalyst component). When mixed eight parts by weight of part A to one part by weight of part B a product meeting the applicable requirements of this specification shall result.

3.3.1 Part A (pigmented modified epoxy resin component). Part A shall consist of a modified epoxy resin and pigment combined with necessary amounts of flow control agents and volatile solvents to meet the requirements of this specification.

3.3.1.1 Pigment. Any combination of the pigments listed in Table I for any specific color shall make up the basic hiding pigmentation for that color. Hiding pigments shall be chemically pure and free from extenders. Small amounts of other shading pigments may be used when necessary to match the color chips provided these additional pigments have good color permanence. The pigment shall be free from extender and shall contain no ingredients other than hiding pigments and intumescent agents.

3.3.1.2 Vehicle. The nonvolatile vehicle for part A shall consist of a modified epoxy resin. When tested in 4.4.4.1, the vehicle shall exhibit only the absorption bands shown in Figure 1 and the strength of these bands shall be in the ratios recorded in Table VI.

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TABLE I. Pigmentation

Color	Fed. Std. No. 595 Color No.	Pigmentation
Olive drab	24087	Red or yellow iron oxide, carbon or lampblack, medium chrome yellow, titanium dioxide.
Black	27038	Black iron oxide, carbon or lampblack.
White	27875 <sup>1/</sup>	Titanium dioxide.

<sup>1/</sup>The mixed white coating will be somewhat off color from 27875 due to the nature of the catalyst. (See reflectance requirement Table IV.)

3.3.2 Part B (catalyst component). Part B shall consist of a resinous amine adduct conforming to the requirements of Table III.

3.4 Quantitative requirements.

3.4.1 Part A (epoxy resin component). Part A shall conform to the quantitative requirements of Table II when tested as in 4.4.

3.4.2 Part B (catalyst component). Part B shall conform to the quantitative requirements of Table III when tested as in 4.4.

3.4.3 Mixed coating. The mixed coating shall conform to the quantitative requirements of Table IV when tested as in 4.4.

TABLE II. Part A requirements

Characteristics	Minimum	Maximum
Total solids, percent by weight of part A	75	--
Pigment, including solvent insoluble intumescent agents, percent by weight of part A	30	34
Vehicle solids, percent by weight of part A	44	48
Viscosity, Krebs Stormer, Shearing rate - 200 RPM		
Grams	150	225
Equivalent K.U.	72	86
Weight per gallon, pounds	10.3	10.7
Bromine, percent by weight of nonvolatile vehicle	18	--
Flash point, closed cup, °F.	110	--

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TABLE III. Part B requirements

Characteristics	Minimum	Maximum
Amine nitrogen content, percent by weight of part B	5.8	6.0
Viscosity, (Gardner Tubes)	S	W
Polyamide resin	Positive	
Weight per gallon, pounds	7.8	8.2

TABLE IV. Quantitative requirements

Characteristics	Minimum	Maximum
Viscosity		
Package, Krebs Stormer Shearing rate - 200 RPM	175	275
Grams	77	92
Equivalent Krebs Units (K.U.)	15	40
Specular gloss, 60°		
Drying time, hours	--	3
Set to touch	--	24
Dry through	--	72
Full hardness		
Hiding power (contrast ratio)	0.88	--
White	0.9	--
Black and olive drab	75	--
Directional reflectance, white only		

### 3.5 Qualitative requirements.

#### 3.5.1 Condition in container.

3.5.1.1 Part A. When tested as in 4.4.8.1 part A shall be free from grit, seeds, skins, abnormal thickening or livering in a freshly opened container and shall show no more pigment settling or caking than can be easily and completely reincorporated to a smooth homogeneous state.

3.5.1.2 Part B. When tested as in 4.4.8.2 part B shall be clear and free from sediment and suspended matter when examined by transmitted light. It shall show no livering, curdling, gelling or skinning in a freshly opened full container.

3.5.2 Mixing properties. When tested as in 4.4.9 a smooth homogeneous mixture shall result. The coating shall be free from grit, seeds, skins, or lumps. After aging as specified in 4.4.9 the coating shall show no signs of gelation.

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3.5.3 Spraying properties. When tested as in 4.4.10 the coating shall spray satisfactorily in all respects and shall show no running, sagging, or streaking. The dried film shall show no dusting, mottling, or color separation and shall present a smooth finish.

3.5.4 Brushing properties. The coating when tested as in 4.4.11 shall brush satisfactorily in all respects and shall dry to a smooth, uniform film free from seeds, runs or sags.

3.5.5 Flexibility. A film of coating tested as in 4.4.12 shall show no checking, cracking or flaking.

3.5.6 Knife test. A film of coating prepared and tested as in 4.4.13 shall adhere tightly to the test panel. It shall be difficult to furrow off with the knife and shall not flake, chip or powder. The knife cut shall show beveled edges.

3.5.7 Water resistance. A film of coating prepared and tested as in 4.4.14 shall show no wrinkling or blistering immediately after removal of the panel from the water. The coating shall be no more than slightly affected when examined 2 hours after removal; and after 24 hours air drying, the portion of the panel which was immersed shall be almost indistinguishable with regard to hardness and adhesion from the portion which was not immersed. A slight discoloration of the immersed portion shall be permitted. When tested as in 4.4.18 the immersed portion shall meet the requirements of 3.5.11.

3.5.8 Hydrocarbon fluid resistance. A film of coating prepared and tested as in 4.4.15 shall show no blistering or wrinkling and no more than a slight whitening or softening upon removal from the fluid. After 2 hours air drying, the portion of the panel that was immersed shall be almost indistinguishable with regard to hardness, color and gloss from a panel prepared at the same time but not immersed.

3.5.9 Salt spray resistance. A film of coating prepared and tested as in 4.4.16 and examined immediately after removal from the test shall show no more than a trace of rusting (No. 9-1 Method 6451 of Fed. Test Method Std. No. 141) and no more than five scattered blisters no larger than 1-mm in diameter.

3.5.10 Accelerated weathering. A film of coating prepared and tested as in 4.4.17 shall show no more than light chalking (No. 6 Method 6411 Fed. Test Method Std. No. 141) and shall meet the requirements of 3.5.11 after removal from accelerated weathering apparatus.

3.5.11 Thermal insulating properties. Films of coating prepared and tested as in 4.4.18 shall perform as follows: The 500°F. temperature indicating spot shall not melt in less than 40 seconds. The 800°F. spot shall not melt in less than 300 seconds.

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#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements specified herein. Except as otherwise specified in the contract or order the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that supplies and services conform to the prescribed requirements.

4.2 Sampling, inspection, and testing. Unless otherwise specified, sampling, inspection, and testing shall be in accordance with section 1000 of Fed. Test Method Std. No. 141.

4.3 Classification of tests. Testing under this specification shall be for the following:

- (a) Qualification (see 3.1 and 6.3).
- (b) Acceptance of individual lots.

4.3.1 Qualification testing shall consist of all tests specified in this specification.

4.3.2 Acceptance testing of individual lots shall consist of all tests in section 4 with the exception of water resistance (see 4.4.14), hydrocarbon fluid resistance (see 4.4.15), salt spray resistance (see 4.4.16), and accelerated weathering (see 4.4.17).

#### 4.4 Test methods.

4.4.1 Test conditions. The routine and referee testing conditions shall be in accordance with section 7 of Fed. Test Method Std. No. 141 except as otherwise specified herein.

4.4.2 The following tests shall be conducted in accordance with applicable methods of Fed. Test Method Std. No. 141 or as hereinafter specified. For all tests requiring the use of mixed coating, parts A and B shall be mixed in the proportions specified in paragraph 4.4.9 and allowed to stand 45 minutes before using.

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TABLE V. Index

Item	Test Method		Paragraph of this specification giving requirements
	Applicable method in Fed. Std. No. 141	Paragraph of this specification giving further references	
Color	4250	4.4.3	3.2
Total solids	4041	--	Table II
Amine nitrogen	--	4.4.5.1	Table III
Polyamide resin	--	4.4.5.2	Table III
Pigment percentage including intumescent	4021 <sup>1/</sup>	--	Table II
Isolation of vehicle	4032	--	--
Vehicle solids	4052	--	Table II
Epoxy resin (part A)	--	4.4.4.1	3.3.1.2
Bromine content of vehicle solids (part A)	7015 <sup>2/</sup>	--	Table II
Viscosity (Krebs Stormer)	4281	--	Tables II, IV
Viscosity (Gardner Tube)	4271	--	Table III
Weight per gallon	4184	--	Tables II, III
Flash point	4293	--	Table II
Specular gloss	6101	--	Table IV
Directional reflectance	6121	--	Table IV
Drying time	--	4.4.6	Table IV
Set to touch	4061	--	Table IV
Dry hard	4061	--	Table IV
Full hardness	4061	--	Table IV
Hiding power (contrast ratio)	4122	4.4.7	Table IV
Condition in container	--	4.4.8	3.5.1
Part A	3011	4.4.8.1	3.5.1.1
Part B	4261	4.4.8.2	3.5.1.2
Mixing properties	--	4.4.9	3.5.2
Spraying properties	4331	4.4.10	3.5.3
Brushing properties	4321, 2141	4.4.11	3.5.4
Flexibility	6221	4.4.12	3.5.5
Knife test	6304	4.4.13	3.5.6
Water resistance	6011	4.4.14	3.5.7
Hydrocarbon fluid resistance	6011	4.4.15	3.5.8
Salt spray resistance	6061	4.4.16	3.5.9
Accelerated weathering	6152	4.4.17	3.5.10
Thermal insulating properties	--	4.4.18	3.5.11

<sup>1/</sup>Use extraction mixture B or C.

<sup>2/</sup>Use the factor of 0.07992 in method 7015 in place of 0.03546.

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4.4.3 Color. In accordance with method 4250 of Fed. Test Method Std. No. 141 compare the specified color with the pigmented coating on white carrara glass panel prepared for the hiding power test and observe for compliance with 3.2.

#### 4.4.4 Analysis of part A.

4.4.4.1 Epoxy resin. Prepare a solvent free film of the isolated vehicle from part A on a rock salt plate by vacuum drying for 30 minutes at 70°C. Scan the infrared spectrum of the dried film from 2 to 15 micrometers using a matching plate in the reference beam. The spectrum should match that in Figure 1 and should show absorbances in the ratios recorded in Table VI, the absorbances being measured at the wavelengths indicated in Table VI using base lines drawn as indicated in Figure 1.

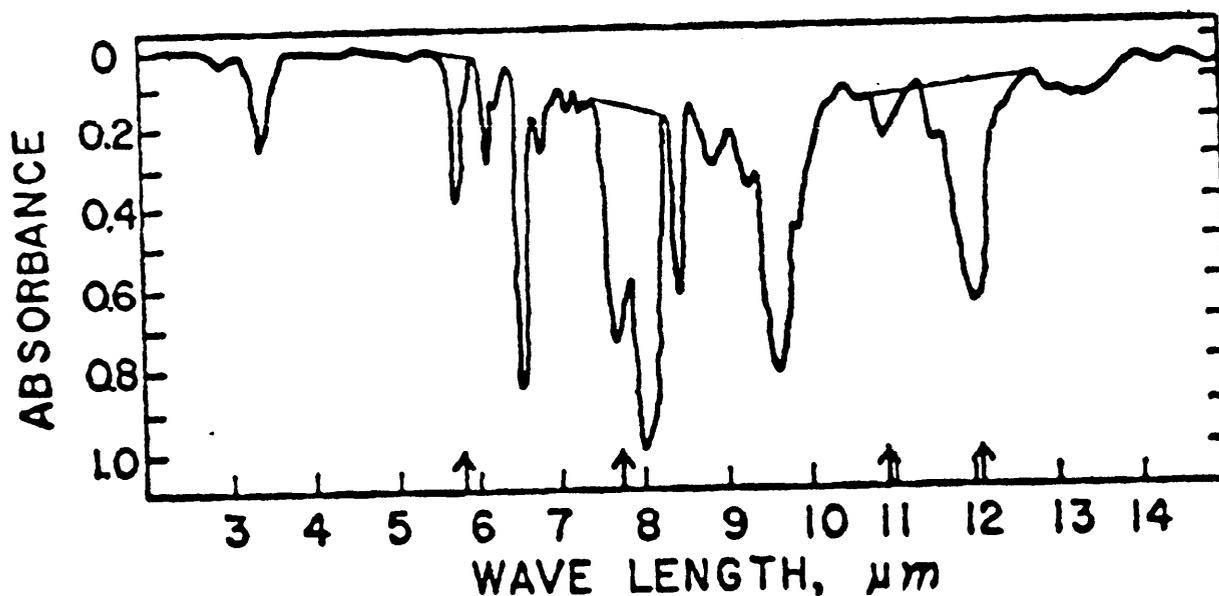


FIGURE 1

TABLE VI

$\lambda_{\mu m}$	$A_{\lambda}$
	$A_{12.05}$
5.8	0.65 ± 0.05
7.75	1.07 ± 0.07
10.95	0.21 ± 0.02
12.05	1.00

Where:

$\lambda_{\mu m}$  = Wavelength in micrometers  
 $A_{\lambda}$  = Absorbance at the wavelength in question  
 $A_{12.05}$  = Absorbance at 12.05 micrometers

#### 4.4.5 Analysis of part B.

##### 4.4.5.1 Amine nitrogen content.

4.4.5.1.1 Reagent - Perchloric acid in acetic acid, 0.1 N. Add 24 ml. acetic anhydride and 8.9 ml. of 70 percent perchloric acid to 1000 ml. of glacial acetic acid (ACS Reagent Quality), and mix well. Cool and standardize against weighed quantities of potassium acid phthalate dissolved in glacial acetic acid. Correct the titration, if necessary, by running a blank on the same volume of acetic acid. Determine the normality as follows:

$$\text{Normality} = \frac{\text{grams potassium acid phthalate} \times 1000}{(\text{ml. of reagent for stand} - \text{ml. for blank}) \times 204.22}$$

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4.4.5.1.2 Procedure. Weigh accurately about 0.5 gram of part B into a 250 ml. Erlenmeyer flask and add 50 ml. glacial acetic acid (ACS reagent grade) and protect from exposure to the atmosphere. Add a few crystals of methyl violet as indicator, using enough to give a strong purple color. Insert a dry Teflon-covered magnetic stirring bar. Attach a vented rubber stopper to the tip of a dry, 25 ml. buret in such a manner that the sample will be protected from moisture during titration and attach a drying tube to the upper end of the buret. Attach the sample flask to the stopper on the buret, stir slowly and titrate with the perchloric acid reagent to a blue-green end point. Run a blank titration on 50 ml. of acetic acid. Calculate the amine nitrogen content as follows:

$$\text{Percent nitrogen} = \frac{(C-B) \times N \times 14.0}{10 \times W}$$

where:

- C = volume of reagent for sample, ml.
- B = volume of reagent for blank, ml.
- N = normality of reagent
- W = weight of sample in grams

4.4.5.2 Polyamide resin. Dissolve 3 to 4 drops of part B (catalyst component) in 10 ml. of chloroform. Add 25 milligrams of ninhydrin and boil gently for 5 minutes. The presence of polyamide resins is indicated by the formation of a blue color which turns red or violet.

4.4.6 Drying time. Draw down a film of the coating compound with 0.0015 inch (0.0030 inch gap clearance) film applicator and determine drying time in accordance with method 4061 of Fed. Test Method Std. No. 141 under referee conditions for compliance with Table IV.

4.4.6.1 Full hardness. The film shall be considered to have reached full hardness when it is very difficult to remove with a knife blade.

4.4.7 Hiding power (contrast ratio). Determine the contrast ratio in accordance with method 4122 of Fed. Test Method Std. No. 141. For olive drab (24087) and white (27875) use a film applicator that will deposit a 3-inch wide film with a dry film thickness of 0.003 inch maximum and for black (27038) a dry film thickness of 0.002 inch maximum. Air dry for 72 hours. Determine the reflectance and verify the film thickness in the area in which the reflectance was measured. Calculate the contrast ratio and check for compliance with Table IV.

#### 4.4.8 Condition in container.

4.4.8.1 Part A. Determine package condition of part A in accordance with method 3011 of Fed. Test Method Std. No. 141 and observe for compliance with 3.5.1.1.

4.4.8.2 Part B. Determine package condition of part B in accordance with method 4261 of Fed. Test Method Std. No. 141 and observe for compliance with 3.5.1.2.

4.4.9 Mixing properties. Thoroughly mix by hand (do not use paint shaker) 8 parts by weight of part A with one part by weight of part B and examine for compliance with 3.5.2. Place 5 ounces of the material in an eight-ounce glass jar and do not agitate or disturb for 2 hours. At the end of this period examine for compliance with 3.5.2.

4.4.10 Spraying properties. Mix the coating as in 4.4.9. Spray on a steel panel to a dry film thickness between 0.004 and 0.006 inch and observe for spraying properties in accordance with method 4331 of Fed. Test Method Std. No. 141 for compliance with 3.5.3. For referee test use automatic application per method 2131 of Fed. Test Method Std. No. 141.

4.4.11 Brushing properties. Apply the coating to a 4- by 12-inch steel panel using a 1-1/2 inch brush and observe for brushing properties in accordance with method 4321 of Fed. Test Method Std. No. 141 for compliance with 3.5.4.

4.4.12 Flexibility. Determine flexibility in accordance with method 6221 of Fed. Test Method Std. No. 141. Apply a 2-inch wide film of coating using a film applicator with a 0.006 inch gap clearance on a smooth finish steel panel. The panel shall be prepared from new cold rolled carbon steel rust-free 0.010 ± 0.001 inch thick with a Rockwell 15-T maximum hardness of 82 and finished with a surface roughness of 8 to 12 microinches. Solvent clean in accordance with method 2011 of Fed. Test Method Std. No. 141 using the aliphatic naphtha-ethylene glycol monoether mixture. Allow the test panel to air-dry 7 days and bend over a 1/4 inch mandrel. Examine the panel for compliance with 3.5.5.

4.4.13 Knife test. Perform the knife test in accordance with method 6304 of Fed. Test Method Std. No. 141 using a flat portion of the panel from the flexibility test. Observe for compliance with 3.5.6.

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4.4.14 Water resistance. Degrease and sandblast, shot blast or grit blast two 4- by 12-inch steel panels conforming to method 2011 of Fed. Test Method Std. No. 141 to a uniform grayish, metallic lustreless appearance. Spray a coat of epoxy primer conforming to MIL-P-52192 to a dry film thickness between 0.0007 and 0.0010 inch and air dry for 1 to 4 hours. Then spray the coating to a wet film thickness of approximately 0.006-0.007 inch and allow the coating to air dry 48 hours. Spray another coat to a wet film thickness of approximately 0.006-0.007 inch. The total dry film thickness shall be between 0.009 and 0.011 inch. Air dry 14 days. Coat all exposed, uncoated metal surfaces with wax or other suitable coating and immerse the panel in distilled water at  $23^{\circ} \pm 1^{\circ}\text{C}$ . for 14 days in accordance with method 6011 of Fed. Test Method Std. No. 141. On removal observe the panel for compliance with 3.5.7. Scrape the wax off the panel gently and wipe the panel clean with an aromatic solvent. Condition the panel under referee conditions for 48 hours and test for thermal insulating properties as in 4.4.18.

4.4.15 Hydrocarbon fluid resistance. Prepare a film of coating as in 4.4.12 and air dry 14 days. Immerse in a hydrocarbon fluid conforming to TT-S-735, Type III for 14 days at  $23^{\circ} \pm 1^{\circ}\text{C}$ . in accordance with method 6011 of Fed. Test Method Std. No. 141. At the end of the test period remove and examine for compliance with 3.5.8.

4.4.16 Salt spray resistance. Prepare three 4- by 12-inch test panels as in 4.4.14 and air dry 14 days. Expose the unscored panels to 5 percent salt spray for 336 hours in accordance with method 6061 of Fed. Test Method Std. No. 141. Upon removal, wash the panels gently in warm running water not more than  $100^{\circ}\text{F}$ . until free from any visible salt deposits and examine immediately for compliance with 3.5.9.

4.4.17 Accelerated weathering. Prepare 2 panels as in 4.4.14 except they shall be 2-3/4 by 5-7/8 inches and edges shall not be waxed. Air dry for 14 days and expose to accelerated weathering for 336 hours in accordance with method 6152 of Fed. Test Method Std. No. 141 using a twin arc apparatus. Examine the exposed panel for chalking by rubbing with a piece of velvet or cheesecloth wrapped around the finger. Using moderate pressure, draw the cloth across the width of the panel in two different directions. Test for thermal insulating properties as follows: Cut a 2- by 4-inch hole centered in a 4- by 12-inch panel, place the accelerated weathering test panel centered on this hole and proceed as in 4.4.18, check for compliance with 3.5.10.

4.4.18 Thermal insulating properties.

4.4.18.1 Panel preparation. Prepare two panels as in 4.4.14 except do not wax edges. Air dry 14 days. Degrease two 4- by 12-inch steel panels by any suitable procedure in method 2011 of Fed. Test Method Std. No. 141.

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4.4.18.2 Procedure. Apply two sets of temperature indicating liquid<sup>1/</sup> spots on each of the uncoated panels. Each set of spots shall be within an area 1-1/2 inches in diameter, centered 3 inches from the end of the panel and shall include 500°, 800°, 1,000° and 1,200°F. melt point indicators. Allow at least 5 minutes for the spots to dry. Place the panel on a ring stand in a ventilated laboratory hood with a set of indicators facing up centered 1-1/8 to 1-1/4 inches above the top of a Fisher high temperature type burner. Withdraw, light and adjust the burner to the minimum gas feed rate required to produce a stable flame. Return the burner to position and record the time required to completely melt each of the temperature indicating spots. Repeat and adjust the burner as necessary to give melting times as follows:

Temperature indicator type	Time in seconds
500°F.	10-15
800°F.	30-60
1,000°F.	40-90
1,200°F.	over 150

Prepare the coated panels using 500° and 800°F. indicators only, and proceed as with the uncoated panels used for flame standardization. The coated side shall be turned down and in contact with the flame. The side with the indicator liquid spots shall face up. Ventilate the hood after each test but reduce draft to a minimum during test to keep a steady blue flame. Record melting times and average closest three out of four values. Check for compliance with 3.5.11.

## 5. PREPARATION FOR DELIVERY

5.1 Part A (epoxy resin component). Part A shall be packaged in 1-gallon multiple friction top containers or in 5-gallon lug cover steel pails as specified. When 5-gallon steel pails are specified, they shall contain 4 gallons of epoxy resin component. Part A shall be packaged level A or C, packed level A, B, or C as specified (see 6.2) in accordance with TT-P-143.

5.2 Part B (catalyst component). Part B shall be packaged in 1-quart or 1-gallon multiple friction top containers. Part B shall be packaged level A or C, packed level A, B, or C as specified (see 6.2) in accordance with TT-P-143.

<sup>1/</sup>Temperature indicating coatings of this type are manufactured by Tempil Corp., New York, New York 10011.

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5.3 The coating compound shall be supplied in a kit packaged as a unit consisting of pigmented compound marked "component A" and the unpigmented compound marked "component B". The quantity of each component in the kit shall be in the proportion 8-to-1 by weight respectively.

5.4 Additional marking. In addition to markings required by TT-P-143 individual containers shall be marked Part A (epoxy resin component) or Part B (catalyst component) whichever is applicable. In addition individual containers shall be marked with the following information:

**Caution:**

Avoid contact with skin and eyes.  
 Keep containers closed.  
 Avoid prolonged or repeated breathing of vapor.  
 Use with adequate ventilation.  
 Wear fresh clothing daily when contacting part B catalyst component.

"INSTRUCTIONS FOR USE - Mix part A well; then add 1 part by weight of part B to 8 parts by weight of part A and mix well (do not use a mechanical agitator) Local exhaust ventilation should be provided where part A and part B are mixed. This material is intended for spray, brush or roller application as mixed. Mixed quantities over 1/2 gallon shall stand 30 to 45 minutes before using. Smaller quantities shall stand 3/4 to 1 hour. The material shall be used within 2-1/2 hours. The "pot life" can be increased considerably by diluting the mixed coating up to 15 percent by volume with special solvent supplied by the manufacturer."

**6. NOTES**

6.1 Intended use. This coating is intended for application as a thermal insulating coating for materiel. Wherever possible the coating should be applied over a surface that has been degreased, sandblasted and primed to promote adhesion. Aluminum should have a chromic acid rinse.

6.2 Ordering data. Purchasers should exercise any desired options offered herein and procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Color required (see 3.2).
- (c) Size of container required (see 5.1 and 5.2).
- (d) Level of packaging and packing required (see 5.1 and 5.2).

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6.3 Qualification. With respect to products requiring qualification, awards will be made only for such products as have, prior to the time set for opening of bids been tested and approved for inclusion in the applicable Qualified Products List whether or not such products have actually been so listed by that date. The attention of suppliers is called to this requirement and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or orders for the products covered by this specification. The activity responsible for the Qualified Products List is the U.S. Army Aberdeen Research & Development Center, Coating & Chemical Laboratory, Aberdeen Proving Ground, Maryland 21005, and information pertaining to qualification of products may be obtained from that activity.

6.4 The coating covered by this specification should be purchased by volume, the unit being one U.S. liquid gallon of 231 cubic inches at 68°F. (20°C.).

Military Custodians

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Preparing activity:

Army - MR  
(Project No. 8010-0660)

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SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No. 119-R004
<b>INSTRUCTIONS</b>		
This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity.		
SPECIFICATION MIL-C-46081A, Coating Compound, Thermal Insulating (Intumescent)		
ORGANIZATION		CITY AND STATE
CONTRACT NO.	QUANTITY OF ITEMS PROCURED	DOLLAR AMOUNT \$
MATERIAL PROCURED UNDER A <input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1 HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE? A GIVE PARAGRAPH NUMBER AND WORDING		
B RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES		
2 COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
3 IS THE SPECIFICATION RESTRICTIVE? <input type="checkbox"/> YES <input type="checkbox"/> NO    IF "YES" IN WHAT WAY?		
4 REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity.)		
SUBMITTED BY (Printed or typed name and activity)		DATE

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REPLACES NAVSHIPS FORM 4863, WHICH IS OBSOLETE