

MIL-C-10578D
 AMENDMENT 3
16 November 1988
 SUPERSEDING
 AMENDMENT 2
 28 August 1987

MILITARY SPECIFICATION

CORROSION REMOVING AND METAL CONDITIONING COMPOUND
 (PHOSPHORIC ACID BASE)

This amendment forms part of Military Specification MIL-C-10587D,
 dated 28 February 1982, and is approved by all Departments and
 Agencies of the Department of Defense

PAGE 1

Paragraph 1.2, add - "type VI - Brush, spray, or dip"

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Paragraph 2.2 - add the following:

ASTM B117 - Salt Spray (Fog) Testing
 ASTM B287 - Acetic Acid - Salt Spray (Fog) Testing
 ASTM D1654 - Standard Evaluation of Painted or Coated Specimens Subjected
 to Corrosive Environments

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Delete table I and substitute the following:

TABLE I.

| Requirement | Type I | Type II | Type III | Type IV | Type V | Type VI | Test paragraph |
|-----------------------------------|--|-----------|----------|---------|--------|---------|----------------|
| Phosphoric acid content gms/100ml | 68 min | 20-25 min | 49 min | 68 min | 68 min | 68 min | 4.3.1 |
| Flash point, °F, min | 135 | 135 | 135 | 135 | 135 | 135 | 4.3.2 |
| °C, min | 57 | 57 | 57 | 57 | 57 | 57 | |
| Appearance | Clear, free from cloudiness, sediment and sludge | | | | | | 4.3.3 |

AMSC N/A

FSC 6850

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Delete table II and substitute the following:

Table II

| Material | Type I ^{1/} | Type II ^{1/} | Type III ^{1/} | Type IV ^{1,2/} | Type V ^{1/} | Type <u>1</u> / ^{1/} |
|---------------------------|----------------------|-----------------------|------------------------|-------------------------|----------------------|-------------------------------|
| Phosphoric acid (85%) | 118 ml | 35 ml | 85 ml | 118 ml | 118 ml | 125 ml |
| Detergent ^{3/} | 5 ml | 5 ml | -- | -- | 5 ml | 7.5 ml |
| Diethyl thiourea | -- | -- | 0.50 gms | -- | -- | -- |
| Butyl cellosolve | 40 ml | 62.5 ml | -- | 40 ml | -- | 7.5 ml |
| Nacconol 90f | -- | -- | 2.00 gms | -- | -- | -- |
| Pluronic L62 (see 6.4) | -- | -- | -- | 5 ml | -- | -- |
| Pluronic L64 (see 6.4) | -- | -- | -- | 5 ml | -- | -- |

^{1/}Water, sufficient to bring total volume to 250 ml, shall be added.^{2/}This formula should be aged 3 weeks before using, or diluted, when first prepared, to 1000 ml for use without further dilution.^{3/}Triton X-100, ethoxylated primary or secondary alcohols, or straight-chain alkyl phenols.

Paragraph 3.3.2, line 1 - delete "and IV" and substitute "IV and VI."

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Paragraph 3.3.3, line 3 - delete "Type III" and substitute "Types III and VI."
line 5 - delete "Type III" and substitute "Types III and VI."

Paragraph 3.3.4, line 1 - delete "and V only" and substitute "V and VI only."

Paragraph 3.3.5, line 1 - delete "only" and substitute "and VI only."

Add the following paragraph:

"3.4 Painted surface corrosion resistance. The compound shall condition the metals listed in paragraph 4.3.8 to resist corrosive environments at least as well as the respective comparison formula listed in table II (see paragraph 4.3.10)."

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Paragraph 4.3.4, line 2 - delete "IV and V" and substitute "IV, V, and VI."

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Paragraph 4.3.6, line 1 - delete "and IV only" and substitute "IV and VI only."

Paragraph 4.3.7.2, line 1 - after "Type III" add "and VI."

Paragraph 4.3.8, line 1 - delete "and V only" and substitute "V and VI only."

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Paragraph 4.3.9, line 1 - delete "only" and substitute "and VI only."

Add the following paragraph:

"4.3.10 Corrosive environment resistance test. Four sets of panels, each set consisting of the four metals listed in paragraph 4.3.8, shall be prepared for testing. Two sets of panels shall be cleaned, conditioned, painted and scribed for testing by cleaning and conditioning with the test material, and two sets shall be cleaned, conditioned, painted, and scribed for testing by cleaning and conditioning with the appropriate comparison formula of table II.

One set, conditioned before painting with the comparison formula, shall be tested together for 72 hours in accordance with ASTM B117, Salt Spray (Fog) Testing. The other two sets, subjected to the same conditioning as the first two sets, shall be tested together for 72 hours in accordance with ASTM B287, Acetic Acid-Salt Spray (Fog) testing. Conditioning shall be in accordance with Directions for Use as required by paragraph 5.3.1. Scribing in a single straight line and evaluation ratings shall be in accordance with ASTM D1654. All panels shall be painted with the same metal paint formula and by the same method of application. Any panel conditioned with the test material that shows a lower rating than the panel of the same metal conditioned with the comparison formula shall fail the test."

Paragraph 5.1.1, - delete this paragraph and substitute the following:

"5.1.1 Level A. Except for type VI, the compound shall be furnished in 1-gallon or 2-gallon polyethylene plastic bottles conforming to MIL-B-26701 or a 5-gallon or 15 gallon polyethylene plastic drums conforming to style B of MIL-D-40030. Unless otherwise specified, type VI shall be furnished in 5-gallon polyethylene plastic drums conforming to style B of MIL-D-40030 (see 6.2)."

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Under "Directions for Use" add the following:

"Type VI (brush, spray or dip) material. Utilize the application procedure:

- a. Newly sandblasted steel. Brush or spray the material over the surface of the steel. (A paint brush or any sprayer that will accommodate acid type material may be used.) Allow the material to dry thoroughly. After a minimum of six hours rinse the unreacted material for at least 30 seconds with running clean water. Let it dry. Apply primer paint.
- b. Corroded ferrous metal. Remove old grease, dirt and oil by scrubbing with an alkaline cleaner or emulsifiable degreaser. Flush with running clean water and rinse for at least 30 seconds with running clean water. Brush thoroughly with a wire brush to remove any loose corrosion products and rinse for at least 30 seconds with running clean water. Brush or spray the material over the surface of the metal. Allow the material to dry. After a minimum of six hours rinse the unreacted material for at least 30 seconds with running clean water. Let it dry. Apply the paint primer.

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- c. Rust and scale on parts. Remove dirt, grease and oil with alkaline cleaner or emulsifiable degreaser. Flush with running clean water and rinse for at least 30 seconds. Soak cleaned part in the material for 1-5 hours. Remove from the bath and air dry thoroughly. After a minimum of six hours rinse the unreacted material for at least 30 seconds with running clean water. Let it dry. Apply primer coat of paint as usual. If the part does not require painting, apply an oil film to the surface."

Paragraph 6.1, - add the following:

"Type VI material is suitable for treatment of corrosion of ferrous metals by using the brushing, spraying or dipping technique. The material reacts with the metal surface. After a minimum of six hours rinse the unreacted material for at least 30 seconds with running clean water."

Custodians:

Army - MR
Navy - AS
Air Force - 68

Preparing activity:

Army - MR

Project 6850-1039

Review activities:

Army - GL, MI, AR, ME
Navy - SA, SH
Air Force - 11
DLA - GS

User activities:

Army - AT, ER
Navy - MC, OS