SAE Aerospace
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AEROSPACE MATERIAL SPECIFICATION

SAE AMS 2486D

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Superseding AMS 2486C

Conversion Coating of Titanium Alloys Fluoride-Phosphate Type

1. SCOPE:

1.1 Purpose:

This specification establishes the engineering requirements for producing chemical conversion coatings on titanium alloys and the properties of the coating.

1.2 Application:

This process has been used typically to provide a coating which is receptive to anti-galling and organic finishes, but usage is not limited to such applications.

1.3 Safety - Hazardous Materials:

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS:

None.

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: custsvc@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

3. TECHNICAL REQUIREMENTS:

3.1 Conversion Bath:

Shall consist of an aqueous solution of the following materials in the concentrations shown:

Trisodium Phosphate ($Na_3P0_4 \cdot 12H_20$) Technical 6.5 to 6.9 ounce per gallon (49 to 51.5 g/L)

Potassium Fluoride ($KF \cdot 2H_20$), 2.3 to 3.2 ounces per gallon (17.5 to 24 g/L)

Hydrofluoric Acid, 1.8 to 3.0 fluid ounces per gallon (14 to 24 mL/L) of 70 weight percent HF or 2.6 to 4.4 fluid ounces per gallom (20 to 35 mL/L) of 48 weight percent HF.

3.2 Preparation:

3.2.1 Masking: Remove or mask dissimilar metal inserts and mask areas not to be coated.

3.2.2 Cleaning: Clean parts to remove oil, grease, dirt, mill markings, heat treatment scale, and other soils prior to immersion in the chemical conversion bath. The use of halogenated solvents is prohibited.

3.3 Procedure:

3.3.1 Coating: Parts shall be immersed in the conversion bath, maintained at 80 °F ± 10 (27 °C ± 6), for 2 to 4 minutes.

3.3.2 Rinsing: Rinse coated parts in a circulating water bath, maintained at a temperature not higher than 185 °F (85 °C). Rinse time shall be not longer than 16 minutes when rinse water temperature is above 100 °F (38 °C).

3.3.2.1 Dissolved solids content of circulating rinse water shall be maintained below 200 parts per million.

3.3.3 Drying: Dry parts for not less than 30 minutes in air at 150 to 200 °F (66 to 93 °C).

3.3.4 Handling: Dried parts shall be handled with clean, dry gloves.

3.4 Properties:

Coating shall conform to the following requirements:

3.4.1 Color: The coating shall be gray in color, but some variation in color intensity is acceptable.

3.4.2 Adhesion: Coating shall be adherent to basis metal when parts are wiped with a clean, cotton cloth. Heavy powdering or coating removal during wiping is not acceptable.

3.4.3 Water Spotting: Random staining, due to water spotting, which does not exceed 5% of the coated area is acceptable.