AEROSPACE
MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York, N.Y. 10017

AMS 2425

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Revised

GOLD PLATING
For Thermal Control

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily for passive thermal control applications where a low solar absorptance, low infra-red emittance, and corrosion resistance are required.

3. PREPARATION:

3.1 Unless otherwise specified, all machining, brazing, welding, forming, and heat treating shall be completed before parts are plated.

3.2 Unless otherwise specified, roughness of surfaces to be plated shall not exceed 32 microinches prior to cleaning. Light abrasive blasting and polishing are permitted to improve the surface finish to produce a high luster.

3.3 Before placing parts in plating solutions, they shall have chemically clean surfaces, prepared with minimum abrasion, erosion, or pitting.

3.4 Electrical contact shall be made in such a manner as will ensure that no immersion deposition will occur.

4. PROCEDURE:

4.1 Unless otherwise specified, plating of parts shall be conducted in the following sequence, except that aluminum alloys shall be given a zinc immersion coating treatment prior to the following electroplating cycle:

1. Copper Strike
2. Nickel Plate
3. Gold Plate (Acid Bath)

Note. When specified, a nickel strike shall replace copper strike when the basis metal is corrosion resisting steel or alloy.

4.2 After plating, rinsing, and drying, all parts shall be treated as follows, unless otherwise permitted, to remove hydrogen embrittlement due to cleaning and plating. All parts shall be handled carefully prior to the completion of the relief treatment. Plated springs shall not be flexed prior to the baking operation.

4.2.1 All parts shall be immersed in water at a temperature not lower than 180 F (82 C) for 15 min. immediately after removal from the plating tank. Plated springs may be removed from the plating racks after hot water treatment and prior to the embrittlement relief operation, provided that release from the racks does not flex the springs.

4.2.2 Steel parts having hardness higher than Rockwell C 40 shall be subjected to additional embrittlement relief not more than 30 min. after completion of the hot water immersion, by heating in air, preferably in a circulating air furnace, to 375 F ± 10 (190.6 C ± 5.6) and holding at that temperature for 3 hr, or by heating in air to 275 F ± 10 (135 C ± 5.6) and holding at that temperature for 5 hours.

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