

Technical Information Bulletin

TURCOAT[®] ALUMIGOLD (TC - ALUMIGOLD B)

ALUMINUM CONVERSION COATING

DESCRIPTION:

TURCOAT ALUMIGOLD (TC-ALUMIGOLD B) is designed to form a golden iridescent chemical film or surface conversion coating on aluminum surfaces, for protection against corrosion and improvement of paint adhesion. TURCOAT ALUMIGOLD (TC-ALUMIGOLD B) can be applied by immersion or spray systems. It meets the requirements of, and has been approved to MIL-C-81706.

Preparation of the ALUMIGOLD Bath:

- a) For each liter of clean tap water, add the appropriate amount of TURCOAT ALUMIGOLD (TC-ALUMIGOLD B) depending on the application process. For immersion application, use 7.5 to 11g/L; for spray application, use 11 to 18g/L; for brush application use 15-23 g/L. Mix until all solids are dissolved; and check the pH of the thoroughly mixed bath. The pH (1.6 to 1.9) will probably be within the correct operating range without additions, but may be corrected as described below.
- b) Aluminum conversion coating baths increase in efficiency upon aging 24 to 48 hours. This seasoning period may be shortened by heating the bath to 70°C, holding that temperature for about 5 minutes, then allowing the bath to cool to operating temperature.
- c) After make-up per above instructions, the pH of the new bath may change somewhat after standing. The correct pH range is 1.6 to 1.9. If the bath goes outside this range on standing, adjustment should be made with a little nitric acid or ammonium hydroxide until the pH is correct before use.

IMPORTANT : TURCOAT ALUMIGOLD (T-ALUMIGOLD B) compound must be protected from air and moisture. Keep containers well closed.

USE INSTRUCTIONS:

Precleaning: Before immersion in the TURCOAT ALUMIGOLD (T-ALUMIGOLD B) tank, surfaces to be treated must be free of grease and other soils. TURCO AVIATION, TURCO AIRLION or TURCO 4215 NC-LT (30-45 g/L water at 70°-80°C) are recommended for precleaning. Parts must be thoroughly rinsed in clean water (preferably warm) after cleaning. Water rinses should be kept pure by steady overflow into weir trough. Rinse tanks should be recharged daily.

Deoxidizing: With certain alloys, such as high silicon containing casting alloys, it is advisable to employ a deoxidizing treatment such as TURCO SMUT-GO #4 at 60-90 g/L water or TURCO ALDOX V at 10-20% v/v, 3 to 7 minutes, at room temperature (25° to 30°C) prior to conversion bath. The deoxidizing operation must be preceded and followed by thorough water rinsing. The rinse following should be cold, preferably a spray rinse.

Processing in the TURCOAT ALUMIGOLD Dip Bath: The clean aluminum parts are immersed in the TURCOAT ALUMIGOLD (T-ALUMIGOLD B) bath at room temperature, preferably 25° to 30°C for about 3-6 minutes. The optimum immersion time will vary somewhat, depending upon the alloy being treated, the age of the bath, and the temperature. The operating pH range is 1.6 to 1.9. Corrosion resistance is promoted by keeping the pH toward the lower end of this range. Freedom from smearing, especially with fresh baths, is favored by a pH toward the upper end of the range.

Water Rinsing: After coming from the TURCOAT ALUMIGOLD (TC-ALUMIGOLD B) bath, the parts are rinsed thoroughly in cold water. Satisfactory corrosion resistance depends largely upon thorough rinsing, the water being kept pure by overflow and frequent change.

Inhibitive Rinsing: Corrosion resistance of the conversion coating is increased by use of a final inhibitive rinse made by dissolving 1½ g of chromic acid per 100L of water. Parts are immersed for 15-30 seconds at room temperature. The rinse should be kept clean by changing frequently, preferably daily.

Drying: The final dry-off may be accomplished by conventional methods at temperature up to 70°C.

pH Control: Close pH control is very important. The operating pH is to be kept within the range of 1.6 to 1.9 by additions of nitric acid when pH gets too high, and by addition of small amounts of ammonium hydroxide when pH gets too low. If a pH meter is not available, Paul Frank No. 1028 pH paper may be used. A laboratory control procedure is available upon request.

Spray Application: TURCOAT ALUMIGOLD (T-ALUMIGOLD B) may be applied by spray. All of the above applies equally to processing by spray, except that the contact time with the solution may be shortened somewhat; and the temperature should be increased. We recommend a spray contact time from 15 seconds upward and a temperature of 35°-40°C.

Replenishment: Replenishment of the bath with small amounts of TURCOAT ALUMIGOLD (TC-ALUMIGOLD B) powder is required from time to time, as the chemicals become exhausted. These Replenishment should be made in sufficient amounts to maintain the TURCOAT ALUMIGOLD (TC-ALUMIGOLD B) concentration as recommended. During times of ordinary operation, the hexavalent chromium content of the bath should be determined every second day, and corrected as required.

Equipment: Dip tanks and all parts of spray systems in contact with the TURCOAT ALUMIGOLD (TC-ALUMIGOLD B) bath should be of 316 stainless steel, or equivalent acid-proof materials.

DISPOSAL INFORMATION:

Dispose of spent solution per local, state and regional regulations. Refer to your TURCO MATERIAL SAFETY DATA SHEET for additional disposal information.

DANGER! Causes severe burns to skin or eyes on contact.

TURCOAT ALUMIGOLD (T-ALUMIGOLD B) conversion coating compound contains zinc fluosilicate and chromic acid. Avoid contact with eyes, skin and clothing. Do not take internally. Avoid breathing vapor for prolonged periods of time. Use with adequate (equivalent to outdoor) ventilation. Do not store TURCOAT ALUMIGOLD (T-ALUMIGOLD B) near oils, greases and oxidizable materials.

Protective clothing, such as a chemical face shield or goggles, gloves, boots and apron, made from chemical resistant materials should be worn when using and handling this product. Overexposure to hexavalent chromium may cause lung cancer risk.

Before using this product refer to container label and TURCO MATERIAL SAFETY DATA SHEET for additional precautionary, handling and first aid information.

NOTICE:

The above information and recommendations concerning this product are based upon our laboratory tests and field use experience with this or similar products. However, since conditions of actual use are beyond our control, any recommendations or suggestions

are made without warranty, express or implied. Manufacturer's and seller's sole obligation shall be to replace that portion of the product shown to be defective. Neither shall be liable for any loss, damage or injury, direct or consequential, arising out of the use of this product.

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