

## Technical Information Bulletin

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# TURCOAT<sup>®</sup> ACCELAGOLD

## ALUMINUM CONVERSION COATING

### DESCRIPTION:

TURCOAT ACCELAGOLD is formulated to produce a golden iridescent chemical film or conversion coating on aluminum surfaces. This results in improved corrosion resistance, improved paint adhesion, and lower electrical resistance. TURCOAT ACCELAGOLD is supplied in powdered form and consists of two parts, PART 1 and PART 2. It is also available in a ready to use liquid form or a liquid concentrate requiring only dilution with water. Contact your local Turco Sales Engineer for details

### APPLICABLE SPECIFICATIONS:

TURCOAT ACCELAGOLD meets and is qualified to the following MIL- specifications and is QPL listed.

- 1.MIL-C-81706 - Chemical Conversion Material for Coating Aluminum and Aluminum Alloys.  
CLASS 1A - For maximum protection against corrosion, painted or unpainted  
CLASS 3 - For corrosion protection where low electrical resistance is also required  
FORM II - Powder, application methods A for Spray, B for Brush and C for Immersion.
- 2.MIL-C-5541B - Specifies the use of materials qualified under MIL-C-81706

### PREPARATION OF TURCOAT ACCELAGOLD BATHS;

**EQUIPMENT:** Dip Tank, spray systems and associated equipment that come in contact with TURCOAT ACCELAGOLD solution should be fabricated from 316-stainless steel or of equivalent acid-proof materials.

**General** - Add TURCOAT ACCELAGOLD PART 1 and TURCOAT ACCELAGOLD PART 2 in the following ratios, using de-ionized water:

<b>APPLICATION</b>	<b>CONCENTRATION</b>	<b>PART 1</b>	<b>PART 2</b>
Class 1A, Spray	375 g/100 L	125 g	250 g
Class 1A, Immersion	750 g/100 L	250 g	500 g
Class 1A, Brush	2250 g/100 L	750 g	1500 g
Class 3, Immersion	750 g/100 L	250 g	500 g

Add TURCOAT ACCELAGOLD PART 1 and TURCOAT ACCELAGOLD PART 2 to water and mix until all solids are dissolved. Determine the pH of the thoroughly mixed bath. The correct operating range is 1.5 to 2.1 for Class 1A application, 2.2 to 2.4 for Class 3. A freshly prepared bath may change pH after standing. A new bath should be prepared at the low end of the concentration range and the concentration of TURCOAT ACCELAGOLD increased as the bath is used. Correct pH with small amounts of nitric acid if high or small amounts of ammonium hydroxide if pH is too low before using.

**NOTE:** TURCOAT ACCELAGOLD compounds must be protected from air and moisture. Keep containers tightly closed when not in use.

## USE INSTRUCTIONS:

**PRECLEANING** - Aluminum surfaces must be absolutely clean, such that no water-break is observed when parts are taken out of cold running water. Your local TURCO Sales Engineer can recommend an appropriate cleaning process.

**DEOXIDIZING:** To insure that the aluminum surface is active and receptive, it is best to include a deoxidizing step prior to conversion coating. For maximum salt spray resistance, however, it may be advisable to avoid deoxidizing of certain alloys. For casting alloys or alloys that contain high levels of silicon, a special TURCO NITRADD solution would be used, See TDB #496.

## PROCESSING INSTRUCTIONS FOR TURCOAT ACCELAGOLD:

**Class 1A: Spray System** - Operate @ 20° to 35°C with a contact time of 15 seconds to 2 minutes. Exact time is dependent upon alloy being processed. Spray pressure should be 10 to 20 psi.

**Immersion System** - Operate @ 25° to 30°C, with immersion time of 15 seconds to 10 minutes. Actual time in solution is dependent upon alloy being processed.

**Rinsing:** Rinse thoroughly with clean tap water followed by a final rinse in de-ionized water. Dry-off may be by conventional methods. Temperature of dry-off should not exceed 55°C. For maximum corrosion resistance, parts should be allowed to dry in a clean environment without heat.

**Class 3: Immersion System** - Operate bath at a temperature of 15° to 20°C, without air or mechanical agitation, for 3 minutes, at a pH of 2.3. Rinse parts thoroughly with clean, cool water for 3 minutes followed by a de-ionized water rinse for 15 seconds. Dry parts in clean environment. Do not heat parts or use hot air to dry parts. Maximum corrosion resistance is promoted by keeping pH near 1.7. Freedom from smearing is achieved by keeping pH near the upper limits of the pH range.

## CONTROL:

**pH Control of TURCOAT ACCELAGOLD Solutions** - Close pH control is important. The use of a reliable pH meter is recommended. If a pH meter is not available, Paul Frank No. 1028 pH paper or EM Reagents, Spezialindicator pH 0-25, Art 9540, made by E. Merck, Darmstadt, Germany may be used. A laboratory test procedure is available upon request. The concentration should be controlled to be within the following ranges:

Spray 3.5 - 4.0 g/L; Immersion 7.0 - 8.0 g/L; Brush 21.0 - 24.0 g/L

Maintenance additions should always be in the ratio of 1 part Part 1 to 2 parts Part 2.

## DISPOSAL INFORMATION:

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

## DANGER!

TURCOAT ACCELAGOLD PART 2 is a strong oxidizing agent and can cause severe burns to skin or eyes. Overexposure to dust or mist from chromium and certain chromium compounds may create lung cancer risk. TURCOAT ACCELAGOLD PART 1 contains sodium fluosilicate and TURCOAT ACCELAGOLD PART 2 contains chromic anhydride. Avoid contact with eyes, skin and clothing. Do not take internally.

Protective clothing, such as a chemical face shield or goggles and chemical resistant boots, gloves and apron should be worn when handling these products. Use with adequate (equivalent to outdoor) ventilation. When mixing TURCOAT ACCELAGOLD PART 1 and TURCOAT ACCELAGOLD PART 2, a NIOSH-approved respirator should be worn.

Store containers in cool, dry, ventilated areas, away from acids, organic materials and reducing agents. Keep containers tightly closed. Store away from eating areas. Do not store containers near heat, open flame. Contact with strong acids or acid fumes may cause highly toxic cyanide fumes to be emitted. Stored in a dry location to avoid rusting of drums and moisture pick-up by product. Do not allow contact with organic materials, such as oils and greases. Do not store in paper, fiber, wood or plastic containers.

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.*

Rev.10/99 (Sup. 5/96)  
TDB #108-31