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Technical Process Bulletin

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Turco Metal Glo FF
Thickened Cleaner and Conditioner for Aluminum Aircraft Surfaces

1. Introduction:

Metal Glo FF is a nonflammable, non-fluoride, acid based cleaner, brightener, deoxidizer and prepaint conditioner for aluminum. Metal Glo FF contains viscosity builders that allows for added contact time enabling this product to remove corrosion products from horizontal and vertical surfaces. Cleaning with deoxidizing produces a chemically clean (water-break free) and streak-free surface.

Metal Glo FF is used to clean, deoxidize and brighten aluminum surfaces prior to polishing, welding, painting or to prepare the surface for a subsequent conversion coating. This product is non-crazing to acrylics, will not etch glass, and can be used over well-bonded paints. Unlike other acidic products Metal Glo FF has a minimum etch rate on all aluminum aircraft surfaces.

2. Operating Summary:

Brush Application: For light oxidation and corrosion removal, dilute one part Metal Glo FF with one part water. For heavy oxidation and corrosion removal, use Metal Glo FF full strength (as received).
Spray Application: For light oxidation and corrosion removal, dilute one part Metal Glo FF with one part water. For heavy oxidation and corrosion removal, use Metal Glo FF full strength (as received).

3. The Process:

Under no circumstances should Metal Glo FF be permitted to come in contact with high strength steel and magnesium components. Should this occur, water rinse immediately. Mask off all sensitive surfaces with acid resistant material using waterproof tape.

The usual process to clean and condition aluminum aircraft surfaces consists of the following steps:

A. If aircraft surfaces are heavily soiled, preclean with HST Turco 5948-DPM, an inhibited alkaline oil and grease remover.
B. Apply a complete and thorough high volume water rinse.
C. Apply Metal Glo FF via brush or manual spray, full strength or diluted 1:1 with water.
D. Water rinse thoroughly.
E. Dry

The usual process to prepare aluminum surfaces for a chemical conversion coating consists of the following steps:

A. If necessary, preclean heavy oils and grease with HST Turco 5948-DPM.
B. Apply a complete and thorough high volume water rinse.
C. Apply Metal Glo FF via brush or manual spray, full strength or diluted 1:1 with water.
D. Water rinse thoroughly.
E. Apply an Alodine conversion coating solution.
F. Water rinse thoroughly.
G. Dry

4. Materials:

Turco 5948-DPM
Turco Metal Glo FF
ALODINE® 1201 – colored chromate conversion coating (optional)
ALODINE® 1001 – clear chromate conversion coating (optional)
ALODINE® 5200 – non-chrome conversion coating (optional)
ALODINE® 5700 – ready-to-use non-chrome conversion coating(optional)

5. Equipment:

Brush Application:
Acid resistant (rubber, stainless steel or plastic) buckets, troughs or other suitable containers should be used to hold the diluted Metal Glo FF solution. Ordinary steel pails and galvanized containers can not be used. If production conditions warrant, troughs may be installed to collect the Metal Glo FF chemical run-off.

Long-handled, window cleaning type brushes, clean cloths or synthetic sponges may be used to manually apply the Metal Glo FF.

Spray Application:
If manually spraying, use only plastic or plastic lined containers and stainless steel pumps. Use angle VEE Jet head and # 6510-9520 tip.

6. Apply the Metal Glo FF:

Build-up:
For light oxidation and corrosion removal, dilute one part Metal Glo FF

with one part water.

NOTE: Operators should be equipped with proper PPE, such as rubber gloves, aprons and goggles to avoid contact with the solution. Adequate ventilation (equivalent to outdoor) needs to be provided.

Operation:
Selecting the size area to be treated at one time will depend on the method of application, the condition of the metal surface, the temperature and the surface configuration. Start at the bottom and work toward the top, one panel width at a time. When applied by brush or spray insure uniform coverage. Treat as much of the aircraft as can be worked without drying. Give additional attention to areas of discoloration and corrosion deposits.

Metal Glo FF solutions are normally applied at temperatures between 60° and 120° Fahrenheit (15° - 49°C). If drying does occur, rewet the surface with Metal Glo FF solution prior to water rinsing.

Metal Glo FF should not be allowed to dry on the metal surface prior to a thorough rinse. A thorough rinse with clean water is necessary to remove both residual Metal Glo FF solution as well as soils and salts that have been lifted from the metal surface.

Good results start with proper cleaning. A clean surface is a "water break-free surface". The rinse water totally sheets the aluminum surface, but oil remaining on the surface will cause the continuous water film to bead up or break. Chemical cleaners will lift and emulsify oils on surfaces and assist in rinsing them from metal surfaces.

Metal Glo FF will aggressively attack aluminum oxidation and corrosion to completely remove them, leaving a clean bright appearance. In the case of heavy soils or heavy corrosion, their removal can be aided by the use of scrubbing such as a Scotch-Brite pad.

Thorough water rinsing after this treatment is necessary to remove the residual salts and soils loosened from the metal surface.

To avoid streaks and patterns, work from the aircraft bottom to the top, one panel width at a time. Best results are obtained when the surface conditioning operation is performed simultaneously on both sides of the aircraft.

7. Storage Requirements:

Metal Glo FF should be stored in closed containers at temperatures between 32° to 104°F (0°C to 40°C). Do not freeze. However, should the product freeze, thaw it in a warm place and carefully stir it prior to use. Do not store with chlorine containing compounds.

8. Waste Disposal Information:

Applicable regulations concerning disposal and discharge of chemicals should be consulted and followed.

Disposal information for the chemical products used in this process is given on the Material Safety Data Sheet for each product.

9. Precautionary Information:

Before handling the chemical products used in this process, the first aid and handling recommendations on the Material Safety Data Sheet for the product should be read, understood and followed.

The processing bath is acidic. Do not get in eyes, on skin or on clothing. In case of contact, follow the recommendations found in the Material Safety Data Sheet for Metal Glo FF.

Henkel Technologies
32100 Stephenson Highway
Madison Heights, MI 48071
Telephone: 248-583-9300
Fax: 248-583-2976

Henkel Technologies
32100 Stephenson Highway
Madison Heights, MI 48071
Telephone: 248-583-9300
Fax: 248-583-2976

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