

DATA SHEET

ALUMINESCENT A Luster-On Product **Deveco Tri-Seal for Aluminum**

This **Trivalent Chromium Conversion Coating for Aluminum Alloys** produces clear, slightly iridescent films while forming a protective surface with low electrical resistance. It uses **Luster-On Aluminescent**, a patented process licensed from the U.S. Navy.

Aluminescent is a powdered product used to form a non-hexavalent conversion coating on aluminum surfaces. The process provides excellent corrosion protection at low cost and forms a base for paint, lacquer, or rubber bonding. The coating can be applied by dip, spray, brush, swab, or roll coating, requires no electric current, cooling or exhaust.

Aluminescent is suitable for both wrought and cast aluminum alloys and is designed for ease of operation with minimum control.

Conversion coatings generated by **Aluminescent** are compliant with European RoHS and ELV directives and meet or exceed the requirements of Mil-C-5541, Type II, Class 1A and Class 3.

Caution!

In setting up production cycles for non-hexavalent conversion coatings it is imperative to avoid cross contamination. Clean, separate rinses and racks should be employed to avoid contamination with hexavalent chromium. Great care should be exercised to assure that there is no drag-in of hexavalent chromium.

Aluminescent

Concentration:	1 to 2 oz/gal
pH:	3.5 to 4.0
Temperature:	70 to 80 °F.
Time:	3 to 5 minutes.

Aluminescent solutions are prepared by dissolving the desired quantity of **Aluminescent** in warm water with stirring. When completely dissolved, assure that the pH of the solution is in the required range.

The pH of the working solution is a function of the concentration of **Aluminescent** and the level of dissolved aluminum in the bath. The pH of the solution should be in the range of 3.5 to 4.0. A solution of 10% sulfuric acid may be used to lower the pH, and a solution of 10% by weight potassium hydroxide should be used to raise the pH.

The preferable operating temperature is 70 – 80°F but higher temperatures may be used to change immersion times.

Immersion time may be varied between 1 and 5 minutes depending on the alloy being processed.

TYPICAL CYCLE

- | | | | |
|---|---------------|---------------|-------------|
| 1. Dev-Kleen N-2, | 3 to 8%, | 90 to 100 °F, | 3 to 6 min. |
| 2. Rinse | | | |
| 3. Deveco Non-Cr Al Deoxidizer | 5 to 15% | Room Temp. | 1 to 3 min. |
| 4. Rinse | | | |
| 5. Aluminescent | 1 to 2 oz/gal | 70 to 80 °F | 3 to 5 min. |
| 6. Rinse | | | |
| 7. Warm Water Rinse (160 °F Max) | | | |
| 8. Dry | | | |

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The quality of the conversion coating film formed from solutions of **Aluminescent** is controlled directly by the pre-treatment. Proper cleaning and deoxidizing is essential. The wide variations in aluminum alloy composition as well as the appearance and function of the film demand many alternate procedures for surface preparation. They may be grouped as follows:

1. Pre-clean: Parts that are heavily soiled with organic contamination should be pre-cleaned by aqueous degreasing or emulsion cleaning.
2. Alkaline Etch: Desirable for greatest film adhesion. May be deleted on parts with close dimensional tolerances.
3. Deoxidize and/or Desmut: Required to remove metallic oxides and smutting from cleaners or etch solutions. **Deveco Non-Cr Al Deoxidizer** is suitable for most wrought alloys. Castings require a nitric-fluoride mix. Contact the Deveco Technical Service for recommendations on specific alloys.

MAINTENANCE - ALUMINESCENT

The concentration should be periodically checked using the recommended control procedure. The pH should be routinely checked daily and maintained in the recommended range. Approximately 2.5 fluid ounces of 10% sulfuric acid will lower the pH of 100 gallons of **Aluminescent** solution 0.1 units.

EQUIPMENT: Tank – Steel lined with Koroseal, polypropylene, or polyethylene

HELPFUL COMMENTS

1. Thorough rinsing is essential both before and after **Aluminescent** immersion. Drag-in of acid or alkali should be avoided.
2. Contamination with hexavalent chromate solutions must also be avoided.
3. In the absence of suitable analytical equipment, control may be accomplished by visual observation of the solution and comparison with a standard.
4. Drying films with hot air or centrifuge is acceptable provided surface temperatures do not exceed 160°F.
5. Filtration is suggested to keep solution free from precipitates forming during operation.

PACKAGE: **Aluminescent** is available in 10, 25, 50, 100 and 300 pound containers.

STORAGE: Keep container closed when not in use. Store container in a cool dry place out of direct sunlight

DISPOSAL: **Aluminescent** solutions contain trivalent chromium. Dispose in accordance with Federal, State, and Local Regulations.

SAFETY AND HANDLING PRECAUTIONS

HIGHLY ACIDIC INDUSTRIAL PRODUCT CONTAINS TRIVALENT CHROMIUM AND FLUORIDE

DANGER! Causes severe burns that may or may not be immediately painful or visible.

HARMFUL IF SWALLOWED OR INHALED.

1. Avoid contact with eyes, skin, and clothing.
2. Wear safety goggles, rubber gloves, and other suitable protective clothing when handling.
3. Wash thoroughly after handling.
4. Avoid inhalation of mist.
5. Use with adequate ventilation.
6. Do not take internally.
7. Avoid prolonged contact with glass, ceramic or concrete. If contact is made, flush promptly and thoroughly with water.
8. Keep concentrate away from combustible, organic, or readily oxidizable materials.
9. Avoid contact or mixing with materials containing chlorine.
10. Before opening container, loosen closure slowly to relieve any pressure build-up.
11. In case of spills and leakage, flush area with plenty of water.
12. Do not mop up or dry up with paper, rags, or sawdust.

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READ MATERIAL SAFETY DATA SHEET BEFORE USING THIS PRODUCT

FIRST AID IN CASE OF CONTACT

FOR EYES: Immediately flush with cool water for 15 to 30 minutes. Hold eyelids apart while flushing to insure contact of water with all surfaces of eyes and lids. Get immediate medical attention.

FOR SKIN: Immediately flush with large quantities of cool water until all acid is removed, paying particular attention to skin under the nails. Immediately remove contaminated clothing and shoes. Wash clothing and shoes before re-use. Get immediate medical attention.

IF SWALLOWED: Rinse out mouth thoroughly with water. Give water to drink without delay. Follow with milk or two (2) ounces of milk of magnesia, then soapy water or salty water (1 tablespoon per glass). Get immediate medical attention.

IF INHALED: Remove from exposure. Get medical attention, if warranted.

Aluminescent is licensed from the U.S. Navy under U.S. patents 6,375,726; 6,511,532; 6,521,029; and 6,527,841

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