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Technical Process Bulletin

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ALODINE® T 5900 RTU
Conversion Coating Process for Aluminum

1. Introduction:

Alodine T 5900 RTU treatment is a complex trivalent chromium conversion coating formulated for treating aluminum and its alloys, metals coated with IVD aluminum, magnesium, titanium and zinc surfaces. This Henkel product is formulated as a Ready-To-Use material for manual spray applications. The process provides bare ASTM-B-117 salt spray resistance and it also serves as an excellent base for organic finishes and adhesives.

Both the product itself and the conversion coating developed by Henkel Alodine T 5900 RTU do not contain Hexavalent Chromium.

2. Operating Summary:

<u>Chemical:</u> Alodine T 5900 RTU	<u>Bath Preparation per 100 Gallons:</u> Ready-to-use (100% concentration)
<u>Operation and Control:</u>	
Concentration	Ready-to-use concentration
pH (meter)	Stabilized (3.8 - 4.0)
Temperature (° Fahrenheit)	70-100 (21 - 37 °C)
Application Spray Time (minutes)	1/2 to 1 1/2
Immersion Contact Time (minutes)	5 to 9

3. Process:

The complete process sequence normally consists of the following steps:

- A. Cleaning using an Ridoline 298 or Parco Spray Wand Cleaner.
- B. Quality tap/city water rinse.
- C. Treating with Alodine T 5900 RTU.
- D. Water Rinse
- E. D.I. flush rinse
- F. Dry

4. Conversion Coating Materials:

Henkel Alodine T 5900 RTU

pH Meter

5. Spray Equipment/Storage Equipment:

Process tanks and equipment used to hold Alodine T 5900 RTU for spraying, spray housing, spray pumps and related piping should be fabricated from 316L, 316, 304L in descending order. Piping and hoses can be constructed of Teflon, PVC or other acid and chemically resistant polymers.

For manual spray equipment, thoroughly rinse pumps and hoses with DI water after each use.

Chemical feed pump parts and other elastomers which may come in contact with Alodine T 5900 RTU product should be EPDM, Viton or Teflon. Support equipment, such as chemical feed pumps, are available from Henkel.

6. Surface Preparation:

A. Cleaning:

All surfaces to be treated with Henkel Alodine T 5900 RTU must be cleaned to a Water-Break-Free surface after a thorough water rinse.

B. Deoxidizing (optional):

Aluminum surfaces with corrosion products or heavy/uneven surface oxidation should be chemically treated with Henkel Turco Metal-Glo #6 or Henkel Alumiprep before the application of Henkel Alodine T 5900 RTU.

After deoxidizing the aluminum surfaces, a thorough cold tap/city water rinse must follow.

Note:

Before applying Henkel Alodine T 5900 RTU all surfaces should receive a thorough DI- Water rinse. This second rinse should remove the last traces of cleaner, deoxidizer and rinse water salts.

7. Treating with the Alodine T 5900 RTU Processing Solution:

A. Spray Application:

Fill the holding tank or pump reservoir, hose and sprayer with Henkel Alodine T 5900 RTU product. Completely and generously wet the cleaned surfaces to be treated for 30-90 seconds. Allow the Henkel Alodine T 5900 RTU to dwell on the surface for up to an additional 5 minutes.

B. Wipe Application:

Wipe applications are mainly for repair purposes of small areas which may have been damaged.

Insure that the surface to receive the treatment is clean, and water-break-free and free of any corrosion or other surface discolorations.

With an appropriate applicator, uniformly and generously wet the surface with Henkel Alodine T 5900 RTU. Allow the product to contact the surface for an additional 5 minutes, re-wiping during the dwell time to keep the surface wet.

8. Water Rinsing After Treatment:

Two stages of water rinsing are desired.

Stage 1 water rinse with quality tap or city water removes the treatment chemistry.

Stage 2 rinse with D.I. water removes the water borne salts found in all non-purified water supplies.

9. Drying:

The conversion coated surfaces can simply be allowed to air dry in a clean environment, forced dried with moving (blowing) air, or dried in a low temperature dry oven now used to dry an Alodine Chromate conversion coating.

10. Coating:

The treated metal surfaces will possess a blue to blue iridescent or blue to gold iridescent coating color.

Once completely dried, the treated surfaces can be immediately painted or the work can be stored in a protected, uncontaminated environment until needed. When handling the dried, unpainted work, operators should wear clean, lint-free gloves.

11. Storage Requirements:

Alodine T 5900 RTU should be protected from freezing. If the chemical is frozen, it will be irreversibly damaged and should not be used. Alodine T 5900 RTU may precipitate if stored at temperatures below 40° and above 100° Fahrenheit (5-38 °C). If exposed to temperatures outside that range for short periods, the product should be immediately returned to the proper temperature and stirred.

12. Waste Disposal Information:

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

Disposal information for Alodine T 5900 RTU is given on the Material Safety Data Sheet.

The processing bath is acidic contains heavy metals and fluorides. Waste treatment and neutralization may be required prior to discharge to sewer.

13. Precautionary Information:

When handling the chemical product 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 solution is acidic and may be irritating to skin and may cause burns to eyes. Avoid contact with skin and eyes. In case of contact follow the recommendations for contact given on the Material Safety Data Sheet for Alodine T 5900 RTU.

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