

# BONDERITE M-CR 871 AERO CHROMATE COATING (KNOWN AS ALODINE 871 TOUCH-N-PREP)

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## 1. Introduction:

BONDERITE M-CR 871 AERO (known as ALODINE 871 TOUCH-N-PREP) Coating is a non-hexavalent chromium dry in place conversion coating designed for use on aluminum and its alloys. The product is designed to save labor, material, and time when applying a dry-in-place military specification approved non-hexavalent chromium conversion coating for touch-up applications. BONDERITE M-CR 871 AERO (known as ALODINE 871 TOUCH-N-PREP) is formulated for both bare corrosion protection and for bonding applications when combined with organic coatings or structural adhesives. Before starting the application procedure, it is necessary to become familiar with the mechanics of the pen itself.

- A. The pen is designed with a protective cap. The cap is simply popped off. DO NOT TWIST or turn to remove this cap.
- B. To activate the pen, hold the pen tip down on the surface to be treated. Press the pen down onto the surface. This opens the internal spring valve allowing the BONDERITE M-CR 871 AERO (known as ALODINE 871 TOUCH-N-PREP) to wet the applicator tip. The liquid's yellow color will be visible. A new unit or new tip should charge in 15-30 seconds. When the BONDERITE M-CR 871 AERO (known as ALODINE 871 TOUCH-N-PREP) just wets the entire tip, release the downward pressure. The unit is ready to use.
- C. Keep the pen's tip wet with BONDERITE M-CR 871 AERO (known as ALODINE 871 TOUCH-N-PREP), but do not overly saturate with the treatment solution.
- D. Immediately after use, gently press the cap back onto the pen to protect the applicator from dirt and damage. Do not use excessive force when replacing the protective cap.

## 2. General Discussion:

### Cleaning:

Begin the process with a clean, water break free, dry surface. If the water rinse or treatment beads up on the surface, it has not been properly cleaned or it was re-contaminated. **Avoid finger marks!** Clean latex gloves are highly effective at preventing finger oil and lint contamination during cleaning.

A preferred method of surface cleaning is the use of a wet abrasive pad to abrade the surface. Abrasion of the surface in two directions at 90 degrees is recommended. After cleaning, rinse with water if appropriate and dry the surface with a clean cloth. If cleaning with a dry abrasive pad is required, a wipe with a clean damp cloth is recommended to help remove residues. Wipe until no dark residue is picked up from the surface. A surface clean of residue (smut, abrasive fines etc.) will help keep the felt tip from becoming fouled.

### Coating Weights and Coverage:

This product is approved for Class 1A coatings in a wide range of coating weights. **Heavy coating weights should be avoided for Class 3.**

MIL-DTL-81706B describes a strip-and-weigh coating weight determination method. The following table offers some guidance in obtaining the proper coating weight range and estimates expected coverage area per pen (with a second coat applied over the first dry coat).

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## Light Coating Weight:

Class 1A and 3. Felt tip damp. Wet film appearance similar to a common felt-tipped type marker. Expected coating weight range is 13 – 18 mg/ft<sup>2</sup>. Dried appearance is nearly colorless. Expected coverage per pen is approximately 50 ft<sup>2</sup>.

## Moderate Coating Weight:

Class 1A and 3. Felt tip moderately wet. Wet film appearance is heavy but would not sag if held at a 90-degree angle. Expected coating weight range is 18 – 22 mg/ft<sup>2</sup>. Expected coverage per pen is approximately 35 ft<sup>2</sup>.

## Heavy Coating Weight:

**Class 1A ONLY.** Felt tip very wet. Wet film appearance is very heavy and would sag and possibly drip if held at a 90-degree angle. Expected coating weight range is 22 – 35mg/ft<sup>2</sup>. Expected coverage per pen is approximately 25 ft<sup>2</sup>. If the coating puddles or tends to run, an excessive coating weight may be obtained. Be especially aware of depressions on the surface where excessive treatment solution could collect.

For economy and quality, the operator should be trained to keep the tip fairly moist but not saturated with the treatment solution.

Proper Application and Use Procedure of BONDERITE M-CR 871 AERO (known as ALODINE 871 TOUCH-N-PREP) Pen per MIL-DTL-81706B, Class 1A and Class 3, Form VI, Method D for Aluminum and Aluminum Alloys Only.

### **3. Cleaning and Deoxidizing:**

#### STEP 1:

Pre-clean the surface. If a solvent is used, do not allow the solvent to dry on the surface, but remove the solvent and dry the surface with a clean lint free cloth.

#### STEP 2:

Wet an abrasive pad with water and scrub the metal surface to remove oxides and expose a fresh metal surface. Abrade the substrate in two directions. Rinse with water while cleaning (if possible) and then look for a water break free surface. If there is a water break, then continue scrubbing until a water break free surface is obtained and rinse again.

#### STEP 3:

After rinsing, wipe the surface with a fresh, clean dry cloth. Insure the complete removal of all abrasive and loosened substrate residues. Allow the metal surface to dry before the coating application.

#### Note:

Wet cleaning is highly recommended. If water wet abrasive is not allowed due to sensitive components in the vicinity of the area to be treated, dry abrasive followed by a wipe with a clean water-damp wiper is

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recommended to remove cleaning residues. Wipe until no dark residue is picked up from the surface. A surface clean of residue (smut, etc.) will help keep the felt tip from becoming fouled.

#### **4. Treating the Surface with BONDERITE M-CR 871 AERO (known as ALODINE 871 TOUCH-N-PREP):**

##### **STEP 1:**

Pop the cap. Do not twist or turn. Activate by holding the applicator tip down on the surface to be treated. Press the pen tip down for 15 to 30 seconds to open the spring valve allowing BONDERITE M-CR 871 AERO (known as ALODINE 871 TOUCH-N-PREP) to wet the applicator tip. When the BONDERITE M-CR 871 AERO (known as ALODINE 871 TOUCH-N-PREP) just wets the tip, release the downward pressure. The unit is ready to use.

##### **Note:**

The operator must insure the tip does not become overly saturated with the treatment solution, especially when creating a coating for Class 3 applications.

##### **STEP 2:**

Apply BONDERITE M-CR 871 AERO (known as ALODINE 871 TOUCH-N-PREP) to the metal surface with firm, smooth, even strokes. Be sure to cover all edges. Overlap each stroke 10-25% to insure full coverage. Excess overlap may deposit a very heavy coating which may be detrimental to performance. **DO NOT PUDDLE! DO NOT RINSE! DO NOT WIPE!**

##### **Note:**

Solution breaks (de-wetting) must not be observed. A void in the wet film indicates inadequate cleaning. If needed, repeat the cleaning. Firm strokes during application helps avoid de-wetting.

##### **STEP 3:**

A second coat is required at a 90-degree angle to the first coat for all MIL-DTL-81706B compliant applications (Class 1A and Class 3). Apply the second coat within 5 minutes after the first coat dries due to the fact that the treated surface becomes more hydrophobic as it ages. **DO NOT PUDDLE! DO NOT RINSE! DO NOT WIPE!**

##### **Note:**

As long as the BONDERITE M-CR 871 AERO (known as ALODINE 1132 TOUCH-N-PREP) pen wets the surface, an adequate coating will form (at least 10mg/ft<sup>2</sup> for a double coat). The dried coating deposited will range from nearly colorless to a moderately white/green opaque color.

##### **STEP 4:**

BONDERITE M-CR 871 AERO (known as ALODINE 871 TOUCH-N-PREP) can be allowed to air dry. Using warm air or a radiant source such as a heat lamp is allowed (maximum recommended temperature is 140°F (60°C)). A consumer hair dryer is ideal and will avoid overheating the surface. Do not disturb the wet film during drying; such as by excessive airflow or contact with the treated surface.

##### **Note:**

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An uneven appearance in the dry film is normal. Pre-warming the surface will give a significantly smoother appearance and is recommended especially when the ambient temperature is less than 50°F (10°C).

**STEP 5:**

To recharge applicator tip, repeat the activation process. Frequent short “jabs” during use are preferred to maintain constant coating weights and avoid over-wetting the felt tip. If the applicator tip dries out or becomes contaminated it should be replaced. Additional tips are available for purchase.

**STEP 6:**

Always replace the cap when not in use to avoid evaporation and contamination.

**STEP 7:**

When BONDERITE M-CR 871 AERO (known as ALODINE 871 TOUCH-N-PREP) dries thoroughly, primers or other coatings may be applied. The painted BONDERITE M-CR 871 AERO (known as ALODINE 871 TOUCH-N-PREP) coating must be allowed to air dry for 14 days per MIL-DTL-81706B before being tested for wet paint adhesion (wet tape).

**Note:**

- (1) A new applicator tip can be cut to conform to any shape with a single edge razor blade.
- (2) Additional applicator tips are available if needed (Product Code # IDH 598819).

Consult the appropriate Material Safety Data Sheets for safety and handling guidelines for the products listed in this bulletin.

**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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