



ALUMIBOND 1200™

- **Listed on QPL.**
- **Maximum corrosion resistance.**
- **Easy to use formulation.**
- **Immersion, spray or brush application.**
- **Excellent base for organic coatings.**
- **Light to dark yellow coatings.**
- **Economical to use.**
- **Minimal effect on electrical characteristics.**

CHROMATE CONVERSION COATING FOR ALUMINUM

ALUMIBOND 1200 is a concentrated powdered chemical process that produces a highly corrosion resistant chromate conversion coating on aluminum and aluminum alloys. The solution is easy to control and has excellent life.

ALUMIBOND 1200 can be applied by brush, spray or immersion. The color of the coating can be varied from light iridescent to dark yellow. This coating may be color dyed or used as a final finish. It also makes an excellent base for organic coatings.

ALUMIBOND 1200 is a self-regulating formula, easy to use and control and is completely uniform throughout the part.

ALUMIBOND 1200 is listed on the Spec. MIL-DTL-81706, the Qualified Products List for Spec. MIL-C-5541 Class 1A, Form II, Method B & C.

OPERATING DATA

IMMERSION APPLICATION

	<u>Recommended</u>
ALUMIBOND 1200	1 opg (7.5 g/l)
Temperature	60 - 100 ° F. (15.6-37.8° C)
Time	15 sec-5 min.
pH	1.3 - 1.8

BRUSH APPLICATION

ALUMIBOND 1200	2 opg (15 g/l)
Temperature	60 - 100 ° F. (15.6-37.8° C)
Contact Time	1 -3 min.
pH	1.3 - 2.0

pH RECOMMENDATIONS

Maintain bath pH at 1.3 to 1.8 with nitric acid. When color of work becomes light, an addition of 1 pound (428 g) of **ALUMIBOND 1200** per 100 gallons of working solution and nitric acid (typically 2-4 oz (15-30 mls) per pound) to maintain pH. Nitric acid additions should be made along with the required **ALUMIBOND 1200** addition.

In certain instances, the pH of a bath will continue to decrease several hours after an addition of nitric acid as the solution seeks equilibrium. Therefore, small additions of nitric should be made allowing 15 minutes before subsequent adjustments.

An increase in pH will cause a lighter color film. Conversely, a decrease in pH will cause a darker color. Too high a pH will produce no coating, too low a pH will produce a powdered coating. Low pH may be raised by additions of ammonium hydroxide.

SOLUTION CONTROL

Analytical Control:

- 1) Pipette 5 ml sample into 250 ml flask and add 75 ml of distilled water.
- 2) Add 15 ml of 10% potassium iodide.
- 3) Add 15 ml concentrated hydrochloric acid.
- 4) Add 1 ml 1% starch indicator.
- 5) Titrate with 0.1N Sodium Thiosulfate until black color disappears.

Calculation:

Mls of 0.1N Sodium Thiosulfate x 0.163= opg of **ALUMIBOND 1200**
(x 1.22 = g/l **ALUMIBOND 1200**).

VARIABLES

Several factors influence the final appearance and protection of the chromated parts, among those are: bath concentration, bath acidity, bath temperature, time, drying temperature, load size, cleaning, agitation, age of solution, transfer times, base metal and rinsing. These variables should be kept in mind when fine-tuning the chromate to meet specific performance requirements.

The initial charge and replenishment data contained herein are normal for most installations; however, your **A Brite Technical Representative** may suggest a deviation from this data if indicated by specific conditions.

NOTES

- Each alloy reacts with the **ALUMIBOND 1200** solution to produce a coating that is characteristic of that alloy. For the treating time selected, the bath should produce light iridescent golden to tan coatings on aluminum. Therefore, if the above-described coatings are not obtained, add **ALUMIBOND** in 1/4 oz. increments per gallon (up to a maximum of 3.0 oz/gal) until satisfactory coatings are produced. As the concentration of **ALUMIBOND 1200** is increased, the bath will have to be titrated to determine the operating concentration. The coatings may also be obtained by adjusting the pH.
- During normal operation, the bath pH will rise causing a reduction in color intensity of the coating. If, during normal replenishment, the addition of the specified amount of acid does not maintain the desired color, the amount of acid per replenishment may be increased slowly to 8-16 fl opg per 1 to 2 pounds of powder.
- All chromate coatings are soft when wet. Coatings will completely dehydrate and harden in 48 hours. Any corrosion or adhesion testing should be done *after* proper curing for the tests to have meaningful results.
- High temperatures accelerate the chromate formation, while low temperatures retard chromate formation.
- Good flowing rinses are necessary for optimum results. Color and corrosion results will be affected by poor rinsing.
- Final hot rinse should not exceed 140°F (60° C) and immersion time kept to a minimum.
- The appearance of the finished product is directly related to the appearance of the base metal. Coatings on 6061, 7075 and diecast will tend to be light in color while 3003 and 5052 will be dark in color.
- Coatings are capable of being dyed various colors for identification purposes. It is recommended that good rinsing is employed since dye solutions are sensitive to drag-in.
- The life of a solution depends on many factors. However, it is recommended that when maintenance additions equal to 150% of the initial make up have been made the bath should be dumped.
- The work after being treated with **ALUMIBOND 1200** should be given two rinses; an over-flowing cold water rinse and a final acidulated rinse.

If coating is too light or powdery, the cause may be one or more of the following:

- a. The work has been improperly cleaned and/or rinsed.
- b. The pH may be too high or too low.
- c. The temperature of the bath or final rinse is either too high or too low.
- d. The concentration of the **ALUMIBOND** is too high or too low.
- e. The coating time is too long or too short.
- f. The **ALUMIBOND** bath has become contaminated.
- g. The Free Acid of the acidulated final rinse is too low (maintain the Free Acid Titration between 0.4 and 0.6 ml.) or the pH of the final rinse is too high (should not exceed 7.0).

DRYING PAINT-BONDING COATINGS

Parts coming from the final acidulated rinse should be dried as soon as possible in an indirectly fired oven or by other means which will not contaminate the metal with fumes, oil, or partially burnt gases. In many cases, heavy-gauge metal will retain enough heat to dry completely and rapidly without using an oven (NOTE: The temperature of the metal should not exceed 150° F to maintain best corrosion resistance).

Products with cavities or pockets, which trap moisture, should be blown dry with a jet of clean, compressed air. Moisture splatters should be dried with clean cloths.

If handling of the dried, un-oiled or unpainted work is necessary, operators should wear clean cotton gloves.

STORAGE/HANDLING

ALUMIBOND 1200 is a strong oxidizing material. Do not store near combustible materials. Keep containers closed when not in use.

The use of **ALUMIBOND 1200** solutions require the handling of concentrated chrome-bearing materials. Avoid contact with skin and eyes. Wear proper protective clothing and face shield. In the event of contact, flush affected area with plenty of fresh water and contact a physician. **REFER TO THE MATERIAL SAFETY DATA SHEET FOR MORE SPECIFIC INFORMATION BEFORE USING THIS PRODUCT.**

MATERIAL SAFETY DATA SHEETS

Material Safety Data Sheets (M.S.D.S.) are readily available on this product. It is strongly recommended that all personnel thoroughly read and understand the information contained in both the Technical Data Sheet and the Material Safety Data Sheet before using this product.

WARRANTY

The information presented herein, while not guaranteed, is to the best of our knowledge true and accurate. No warranty or guarantee expressed or implied is made regarding the performance of any products, since the manner of use is beyond our control. No suggestion for product use nor anything contained herein, shall be construed as a recommendation for its use in infringement of any existing patent, and we assume no responsibility or liability for operations which do infringe any such patents. The above includes confidential and proprietary information of **A BRITE** and is furnished to you for your use solely on products or processes supplied to you by us.