

# ACCU-LABS INC.

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**A2LA Accredited ISO/IEC 17025:2005 Certificate # 2558.01**

## **213 ALUMINUM BRIGHT DIP**

**ACCU-LABS 213 Aluminum Bright Dip is an acid formulation containing fume suppressant and inhibitor for chemical polishing (bright dipping) of most aluminum alloys. This formulation is widely used commercially. 213 Aluminum Bright Dip contains additives to reduce nitrogen oxide fumes and to enhance the brightening ability.**

**MAKE-UP: 213 Aluminum Bright Dip to level; DO NOT ADD WATER!**

### **OPERATING GUIDELINES:**

<b>Specific Gravity</b>	<b>1.68-1.74</b>
<b>Nitric Acid</b>	<b>2.0-4.0% by volume</b>
<b>Temperature</b>	<b>180-220°F</b>
<b>Dwell Time</b>	<b>Variable</b>

**213 Aluminum Bright Dip may be maintained for long periods of processing by simply adding the concentrate as needed to provide a uniform solution level and to maintain the specific gravity level. Due to the operating temperature, considerable evaporation will occur during non-production hours; therefore it is necessary to top the bath with up to an inch of water at the end of production to prevent precipitation of aluminum phosphate (ice).**

**213 Aluminum Bright Dip operates most effectively when the aluminum content is in excess of 10 grams per liter. A newly prepared bright dip provides adequate chemical polishing, but improves as aluminum is dissolved into the processing bath. The aluminum content of a production bath will adjust to 20 - 45 grams /liter. Very seldom will operating procedures result in aluminum content over 45 grams/liter.**

### **EQUIPMENT**

**Tanks, heating coils and processing baskets must be constructed of stainless steel. Types 302, 304, 321 and 347 are considered to be generally equivalent in chemical resistance. Mechanical or agitation may be used.**

## **ANALYSIS PROCEDURE**

**Specific Gravity:** Hydrometer with range of approximately 1.68 - 1.74

**Aluminum:** By atomic absorption method

**Nitric Acid:** 2 ml sample of bright dip solution in a 250 ml beaker  
Add 50 ml 85% Phosphoric Acid  
Heat beaker contents to 125°F  
Titrate with Ferrous Ammonium Sulfate (reagent grade)  
until permanent brown color appears.  
% by wt. Nitric Acid = mls x factor  
= specific gravity

### **Ferrous Ammonium Sulfate Reagent:**

**Dissolve 230 grams Ferrous Ammonium Sulfate (CP) in 500 ml distilled water.**

**Dilute to 1000 ml in volumetric flask.**

**The factor of freshly prepared reagent should be 0.70**

**HANDLING:** Always wear eye protection and personal protective gear when handling or working with this or any chemical product. Avoid contact with eyes and skin. Read MSDS prior to using.

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