Brite Dip 8 EL

Brite Dip 8 EL is a mixture of acids and additives blended in the proper proportions to produce a bright reflective surface on wrought aluminum alloys by immersion.

Not all alloys are suitable for bright dipping. In general, the high purity alloys (1100 series), the high strength alloys (5357, 5457, etc.) and the extrusion alloys (6061, 6063, 6463) can all be brightened to some extent, although secularity will depend upon the exact alloy.

Note: Cast aluminum and high silicon alloys are unsuitable for bright dipping.

Features & Benefits

Short processing times	Higher productivity
Excellent polishing, leveling action	More cost effective than buffing
Minimal fuming	Safer to work with
Repeatable results	Lower reject rate, lower cost

Typical Applications

- Replace mechanical buffing.
- Can be used as final finish if sealed with a protective coating such as a lacquer or anodized.
- Produce a highly reflective surface
- Light deburring

Operating Conditions

Concentration	Use as received
Temperature	195°F – 220°F Optimum temperature depends upon several factors, but for consistent results, temperature should be controlled. Below 195°F there will be very little brightening. Above 220°F excessive gassing and pitting of the metal may result, depending on the aluminum alloy and the type of cold work performed on the alloy. Used baths may need higher temperature than freshly made baths.
Immersion time	1 – 5 minutes

	The exact time necessary for good brightening depends upon: temperature of the bath, its acid strength, the amount of aluminum dissolved in the dip and the surface finish before dipping. New baths generally require the shortest times. As the bath is used, dip times may be lengthened. Additionally, dip times will be shorter at higher temperatures. Excessively long times may produce pitting of the aluminum.
Draining	30 seconds maximum This is the transfer time between the dip and the rinse. While long drain times are more economical regarding drag-out, excessively long draining permits the acid to dry on the work and produces stains or etching.
Rinsing	Adequate rinses, both before and after bright dipping, are essential. The pre-dip rinse should remove all traces of cleaners from the surface of the metal to prevent contamination of the dip especially by silicates. Carry over of excess water into the dip should also be prevented.
Precleaning	The ordinary methods of cleaning aluminum are satisfactory. This may include degreasing, emulsion cleaning, alkaline cleaning, or any combination.
Equipment	Tanks to contain the bright dipping solution should be heliair welded 316, 321, or 347 Stainless Steel as should be the heating coils. Automatic heating controls and means of agitation are highly desirable. Exhaust must be provided.
Ventilation	Required
Agitation	Oil-free agitation or work agitation is recommended in many installations to insure movement to prevent localized “dead spots”, gas entrapment or gassing streaks.
Bath control	During operation of the Brite Dip 8 EL solution, water and nitric acid will boil away and be consumed. However, loss of the other bath ingredients will be slow, except by drag-out. A guide to replacement of the water and nitric acid is by specific gravity measurement, A reading is taken of the new solution at the operating temperature, then, after some use; a second reading is taken.

The specific gravity is taken with a hydrometer to the second decimal place (0.01 specific gravity unit). The hydrometer should have a range from 1.60 to 1.75.

A relatively fresh bath's specific gravity is maintained by addition of water (to original solution level). As the bath is operated, nitric acid will be consumed, thus requiring additions of nitric acid and water. A stock solution of 50% (vol) nitric acid and water should be stored as makeup solution.

Defect	Correction that may be required
Lack-luster brightening	Increase temperature Too much water in bath – add full strength Brite Dip 8 EL Increase immersion time
Pitting	Reduce temperature Shorten dipping time
Staining	Check rinsing or water condition Check cleaning cycle
Etching	Shorten transfer time

Even with most satisfactory operations and control, a point will be reached where so much aluminum has been dissolved in the bath, that further additions or corrections will not produce adequate brightening. At this point, the bath should be discarded and replaced with fresh material.

Titration Method

1. Place 50 mL of 85% Phosphoric Acid into a dry 150 mL beaker.
2. Pipette exactly 10 mL of Brite Dip 8 EL working solution into the beaker.
3. Heat the beaker to 100°F to 120°F with continuous stirring. Do NOT go above 130°F**.**
4. Titrate drop-wise with the 1.0 N Ferrous Sulfate until a permanent brownish color appears. As the end-point approaches, gassing occurs, and nitrogen peroxide fumes are produced. At the end-point the fuming ceases.
5. Record mL used.

Calculation

$$Wt\ \%\ Nitric\ Acid = mL\ 1.0\ N\ FeSO_4 \times 0.18$$

Note: The % by weight of nitric acid in a Brite Dip 8 EL bath should range between 4% to 5%.

Waste Disposal

Neutralize Brite Dip 8 EL to a pH between 6.0 to 8.0 with either caustic soda, soda ash, or lime. The caustic soda, soda ash and lime should first be dissolved in water before adding to the Brite Dip 8 EL solution. Add the alkaline solution since neutralization generates heat. After the Brite Dip 8 EL solution's pH has been adjusted to 6.0 to 8.0; solution to stand for a 30 minute to 1-hour period to allow time for the precipitation of metallic salts. After the standing period decant the liquid portion off into a disposal system. Always consult local, state, and federal regulations for your area.

The precipitated metallic salts should be removed and drummed and then discarded by your local waste disposal facility.

Caution

Consult the Brite Dip 8 EL SDS prior to handling material.

WARRANTY: THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.

Our people. Your problem solvers.

For more information on this process please call us at
1-800-648-3412
or techservice@hubbardhall.com