
MATERIAL SAFETY DATA SHEET

EPS 1375 ELECTROPOLISHING SOLUTION

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METALS THAT PRODUCE EXCELLENT RESULTS:

Aluminum 3003; 5457; 5557; 6061; 6463; 7000 series (Wrought Aluminum Alloys; No Die Cast Alloys)

Copper, Brass, Monel & Bronze

200 & 300 Series Stainless Steel

GENERAL OPERATING CONDITIONS:

Temperature 140-170 deg. F.

Preferred Temperature 170 F (after enough Aluminum is dissolved)

Anode CD 10-20 amps/sq.ft.

Preferred 15 amps/sq.ft.

GOAD COMPANY
144 Kentucky Avenue
Independence, MO 64053
800-729-4623
(FAX 816-836-2113)

Tank Current 3 amps/gallon

Tank Voltage 18-40 volts

Cathode CD 10-50 amps/sq.ft.

Preferred 15 amps/sq.ft.

Specific Gravity @ 70 deg F 1.483 (New Solution) +/- 0.005

Metal Removal Rate 0.001 inches/1500 amp-minutes/sq.ft

Maximum Dissolved Metal

For Good Polishing 2.5% by weight

Sludging Low Sludging if Stainless Steel Tank
& Cathodes are used.

EQUIPMENT:

Cleaning Tank (ALK.) or Degreaser
Mild Steel Tank, heated or Polypropylene

Drag-out Tank (Acid_
316 Stainless Steel or Polypropylene

CF Rinse Tank (ALK.) Mild Steel or
Polypropylene

CF Rinse Tank (Acid)
Polypropylene

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CF Rinse Tank (Acid) Polypropylene

Dilute Nitric Acid Tank
316 SS or Polypropylene

Electropolishing Tank (Acid)
316L Stainless Steel or 1/2" or
1" PVDF (optional PVC liner)

CF Rinse Tank (Acid)
Polypropylene

Hot Water Rinse Tank (Acid)
316L Stainless Steel

The **EPS TOTAL SYSTEM ELECTROPOLISHING LINE** includes lab models, manual lines, totally automated lines, including carousels and bulk processing equipment. **EPS SYSTEMS** are modular in design so they can be adapted to your growing needs.

RACKS FOR PARTS

Racking is the most important consideration for excellent electropolishing results. Racks that are used for **EPS # 1375** should be copper with titanium clips. Racks should preferably be coated with a thin layer of titanium, but PVC is preferred because it does not rob any current from the work load.

ELECTROPOLISHING SOLUTION

The solution is ready to use out of the drum with the exception that 11 grams of aluminum be dissolved in virgin E.P. bath before using. It should be pumped into the tank, heated to the specific temperature and mixed thoroughly while dissolving the aluminum. Take specific gravity at recommended temperature. Racks of work should be cleaned and rinsed before being placed in the tank. Activate rectifier and adjust current density for particular metal or alloy. Parts should sit in tank for 20-30 seconds before rectifier is turned on to achieve a uniform oxide layer on the work. Run sample parts to determine polishing time (usually 1-10 minutes). Rinse parts in drag-out tank after polishing. From this tank are further rinsed and dried. If aluminum is to be electropolished, voltage should be set between 18-40 volts. Altering the cathodic square footage can control current density. To avoid etching or pitting, agitation should be set at 2-3 inch stroke of about 20 cycles per minute. Air agitation should also be used for a brighter finish. As the bath is used and acquires dissolved aluminum, water may be added.

SOLUTION CONTROL

The bath is easily controlled by specific gravity and metal content.

SPECIFIC GRAVITY

Specific Gravity VS. Percent of metal at 700 Deg F

0% Metal	1.483
1%	1.493
2%	1.503
3%	1.513
4%	1.533

METAL CONTENT OF THE BATH

For best results, metal content of the bath should not exceed 2.8 percent by weight. Since metal content, drag-in, drag-out, electrolysis and hygroscopic nature of the bath all effect specific gravity; gravity should be tested regularly (once or twice daily). The metal content does not generally change rapidly, and an analysis can be obtained for the **EPS** lab or done in-house once per week.

PRODUCT SAFETY INFORMATION

Normal precautions must be taken. Goggles, glasses or face shield should be worn when working near the tank. Protective acid-resistant clothing should be worn, including rubber gloves and rubber boots. Shower and eyewash must be located near the tank. Safety Data Sheets describing accident treatment procedures should be posted in the proper work areas.

POLLUTION CONTROL

With **EPS # 1375**, the flowing rinse water should be treated by hydroxide precipitation, ion exchange or other available technology.

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