

Mirapic ME-810

Etching Solution

Technical Data

GENERAL DESCRIPTION

Mirapic ME-810 is a water soluble, dry powder containing fluoride-bearing salts, which can be used to replace hazardous hydrofluoric acid. (1 oz. per gal. of **Mirapic ME-810** in water with the addition of sulfuric, nitric, or hydrochloric acid is equivalent to 1% by volume of 60% hydrofluoric acid.).

SUGGESTED OPERATING CONDITIONS

Pickling and Descaling Stainless Steel (300, 400 Series):

Concentration	8 – 16 oz. per gal. (60 – 120 g per L).
Nitric Acid (36° Be)	25 – 50% by volume.
Temperature	Ambient to 120° F (49° C).
Equipment	Rigid (non-plasticized) PVC, polyethylene.

Etch on Silicon-Aluminum Castings:

Concentration	8 – 16 oz. per gal. (60 – 120 g per L).
Nitric Acid (36° Be)	50 – 75% by volume.
Temperature	Ambient.
Equipment	Rigid (non-plasticized) PVC, polyethylene.

Etch on Magnesium:

Concentration	10 – 30 oz. per gal. (75 – 225 g per L).
Temperature	Ambient.
Equipment	Koroseal, rubber, lead, rigid (non-plasticized) PVC, polyethylene.

Bright Pickling Titanium:

Concentration	2 – 4 oz. per gal. (15 – 30 g per L).
Nitric Acid (36° Be)	10% by volume.
Temperature	Ambient to 120° F (49° C).
Equipment	Koroseal, rigid (non-plasticized) PVC, polyethylene.

Descaling Titanium:

Concentration	2 – 4 oz. per gal. (15 – 30 g per L).
Sulfuric Acid (66° Be)	10% by volume.
Temperature	Ambient to 120° F (49° C).
Equipment	Koroseal, rubber, lead, rigid (non-plasticized) PVC, polyethylene.

MAKE-UP PROCEDURE

Fill tank $\frac{3}{4}$ full and slowly add the full amount of mineral acid with mild agitation. Next add the full amount of **Mirapic ME-810** to the solution. Last add the remainder of the water and adjust to the appropriate operating temperature.

NORMAL CONTROL

Analytical Method (Equipment available from Chautauqua Chemicals Co.)

1. Pipette a 10 mL sample of **Mirapic ME-810** into a 250 mL Erlenmeyer flask.
2. Add 2-3 drops of phenolphthalein indicator.
3. Titrate with 1.0N sodium hydroxide to faint pink endpoint which should persist for at least 15 seconds.
4. Add drop by drop 0.10N sulfuric acid to remove any pink color from the sample.
5. Add 40 mL of saturated boric acid solution, 40 mL of reagent grade alcohol, and 8 g of potassium chloride.
6. Mix to dissolve the potassium chloride.
7. Add 5 drops of methyl orange indicator.
8. Titrate with 0.10N sulfuric acid to faint pink endpoint and record the volume (mL) of sulfuric acid used.
9. Calculation: Concentration of **Mirapic ME-810** (ounces per gallon) = mLs of H₂SO₄ x 0.6

HANDLING AND SAFETY CONSIDERATIONS

Consult MSDS sheet on this product for handling considerations, hazard information, and first aid procedures.

OTHER INFORMATION

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