

Mirapic ME-811

Etching Solution

Technical Data

GENERAL DESCRIPTION

Mirapic ME-811 is a water soluble, dry powder containing acid salts with the addition of nitric acid to process Zamak-3 zinc die castings (Mix 1) and high silicon aluminum (Mix 2). Both treatments result in a leveled and fine-grained activated surface for post-seeding chemical or electroplating operations.

SUGGESTED OPERATING CONDITIONS

Pickling and Descaling Zamak-3 Zinc Die Castings

Normal Use:

Concentration	3.5 oz. per gal. (26 g per L).
Nitric Acid (42° Be)	4.5% by volume.
Time	15 – 60 seconds.
Temperature	85 – 115° F (29 – 46° C).
Equipment	Mild steel lined with PVC, polypropylene. Teflon heat exchangers.
Acid Number Range	20 – 50

Solution Make-Up:

Warning: Use extreme caution when adding acidic components to **Mirapic ME-811**. Always add acid to water.

1. Fill tank $\frac{2}{3}$ full with water.
2. Carefully add required amount of **Mirapic ME-811** to avoid splashing.
3. Carefully add required amount of nitric acid (42° Be) over entire surface of bath to avoid splashing and excess heat generation.

Maintenance:

Additions of **Mirapic ME-811** and nitric acid (42° Be) to bath are made at the same ratio as the original makeup. Add **Mirapic Me-811** and nitric acid (42° Be), as needed, to keep the acid number in the range of 20 – 50. Follow the procedure below for determining acid number.

1. Pipette a 2 mL sample into a 250 mL beaker. Allow sample to cool to room temperature.
2. Add 100 mL of distilled water.
3. Add 4 – 5 drops of bromcresol purple indicator.
4. Titrate with 0.10N sodium hydroxide until a bluish-purple color persists for at least one minute.
5. Calculation: Acid Number = mLs of 0.10N NaOH x 2.0

Etch on Silicon-Aluminum Castings

Normal Use:

Concentration	4 – 32 oz. per gal. (30 – 240 g per L).
Nitric Acid (42° Be)	Use undiluted.
Time	Based on Mirapic ME-811 concentration.
	4 oz. per gal. 30 – 120 seconds.
	8 oz. per gal. 15 – 60 seconds.
	16 oz. per gal. 5 – 20 seconds.
	32 oz. per gal. 2 – 5 seconds.
Temperature	Ambient.
Equipment	Mild steel lined with PVC, polypropylene.

Note: Noxious fumes are evolved, ventilation is required.

Concentration depends on alloy, amount of smut to remove, and available immersion time.

Solution Make-Up:

Warning: Use extreme caution when working with nitric acid (42° Be).

1. Fill tank with nitric acid (42° Be) to operating level.
2. Carefully add required amount of **Mirapic ME-811** to avoid splashing.

Maintenance:

Bath is highly acidic and cannot be controlled using an acid number. Visual observation of parts is used as an indication of replenishment. Additions of **Mirapic ME-811** and nitric acid (42° Be) should be made in the same ratio as original makeup.

HANDLING AND SAFETY CONSIDERATIONS

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

OTHER INFORMATION

No warranty, expressed or implied of merchantability fitness for a particular purpose or otherwise, is made. Buyer assumes all risk of use, storage and handling. Chautauqua Chemicals Company, Inc. shall not be made liable for any incidental or consequential damages arising directly or indirectly in connection with the purchase, storage, handling or disposal of this product.

TDS Number:
Revision Date:

50672C
July 22, 2014

