

# MAGNESIUM

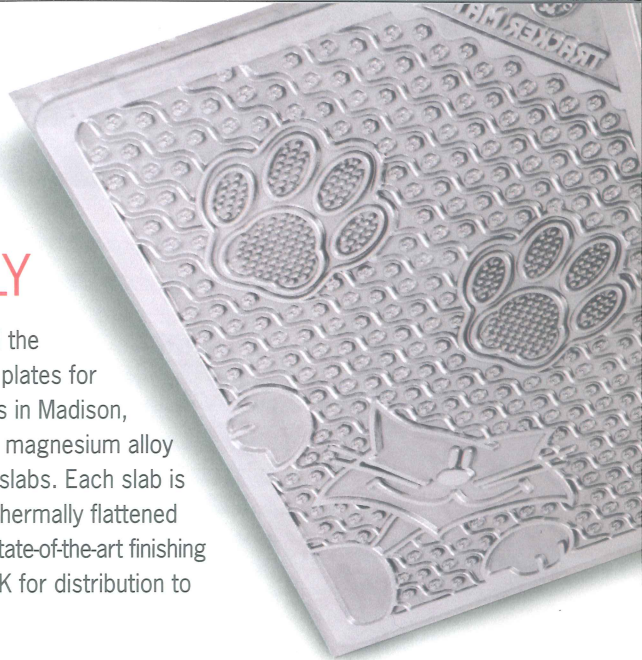


## CLEAN, FAST AND USER-FRIENDLY

Magnesium Elektron has produced the industry standard in photoengraving plates for nearly four decades. The quality starts in Madison, Illinois USA with photoengraving grade magnesium alloy cast into 3,500 lb. (1,600kg. high purity slabs. Each slab is processed on two large rolling mills, then thermally flattened and annealed. The millsheet is coated in our state-of-the-art finishing plants in Findlay, Ohio USA and Manchester UK for distribution to engravers worldwide.

Precision Magnesium Engraving Plates are available pre-sensitized with traditional Red Top™, AQ-BLU™ aqueous developed coating, or new Hydro-Solve™ photoresist. Our complementary designed chemical products function together to produce optimum results for shallow or deep etching.

Light weight, fast etching and environmentally-friendly, magnesium is used for a variety of applications including foil stamping, embossing, thermal dies, flexography, plaques, awards, rubber stamp masters, fabric and leather embossing.



## COMPLETE MAGNESIUM PHOTOENGRAVING PRODUCT LINE

### Photoengraving Plates

Red Top PRC™ Magnesium  
AQ-BLU™ Magnesium  
Hydro-Solve™ Magnesium

### Developers

Red Top PRC™ Cold Developer  
Magnesium MD Cold Developer  
AQ-BLU™ Developer  
Hydro-Solve™ Developer

### Premier Etch Additives

Rev-Flex®  
Elektron Etch™  
Mago20®  
X-Flex®

### Fine Screen Additives

X5K®  
Hydro-Etch®

### Sundries

AQ-BLU™ Top Remover  
Express Guard® Plate Protector  
Revere Wetting Agent  
AQ-BLU™ Photo Resist  
Red Top PRC™ Photo Resist



## Magnesium Elektron

SERVICE & INNOVATION IN GRAPHIC ARTS



### USA

1001 College Street, P.O. Box 258 • Madison, IL 62060 USA  
Tel: 800-851-3145 / +1 618-452-5190 Fax: +1 618-452-3190  
Email: sales@magnesium-elektronusa.com

### EUROPE

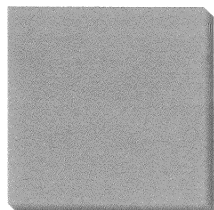
P.O. Box 23, Rake Lane, Swinton • Manchester M27 8DD UK  
Tel: +44 (0)161 911 1000 (option 3) Fax: +44 (0)161 911 1341  
Email: gasales@magnesium-elektron.com

[www.magnesium-elektron-gap.com](http://www.magnesium-elektron-gap.com)

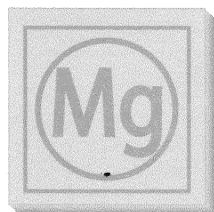
# SUPERIOR MAGNESIUM ETCHING



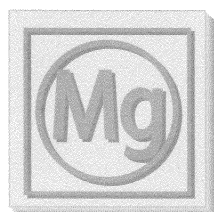
NEGATIVE



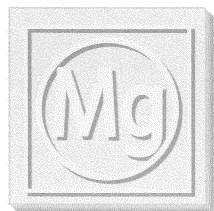
PHOTORESIST COATED  
PLATE



DEVELOPED PLATE



ETCHED PLATE



STRIPPED PLATE

## 1. STORAGE

Store Magnesium Elektron Precision Magnesium photoengraving plates in a cool, dry place.

## 2. ARTWORK

Inspect negative carefully for pinholes in the black areas. Pinholes cause pimples if not opaqued. Image edges should be sharp straight lines otherwise ragged shoulders may result.

## 3. EXPOSURE

Proper exposure is essential to successful etching. Using a Stouffer 21-Step Sensitivity Guide, expose Red Top plates to a solid Step 6 – 8; AQ-BLU plates to a Step 8 – 12; and Hydro-Solve to a Step 8 – 9. (Try higher end of range for fine detail work.)

## 4. DEVELOPING

Development can be by either automatic or hand processing. For automatic processing, follow the equipment manufacturer's instructions. Hand processing can be accomplished in a dip tank, tray or spray processor. Red Top: Immerse exposed plate in dip tank or tray with moderate agitation for approximately two minutes, or in spray processor for approximately one minute. After the unexposed coating has been washed away, remove the plate and spray or rinse with fresh, clean developer. Caution: Red Top coating is easily damaged as it comes out of the developer solution. Dry the plate with a clean air current.

AQ-BLU/Hydro-Solve: Mix one part AQ-BLU Developer Concentrate with five parts water or one part Hydro-Solve Developer with four parts water. The solution may be used at room temperature (minimum of 70° F (20° C) or heated (maximum of 100° F (38° C)). At room temperature, AQ-BLU plates will develop in about 60 seconds. For Hydro-Solve allow about three minutes. Plates will develop faster when solution is heated. Do not overdevelop. Do not wipe plate while it is in the developer solution. DO NOT add back Developer Concentrate to compensate for evaporation loss. Change the solution when developing times lengthen. Optimum results are obtained with fresh developer.

## 5. POST DEVELOPING

Red Top: After the developer solvent on the plate is dried, harden the coating by running cold water over it until the image appears glossy. Finish by heating the plate to 250° to 300° F (120° to 150° C) for at least two minutes, up to four minutes for thicker gauges.

AQ-BLU/Hydro-Solve: Remove plate from developer solution and rinse with lukewarm water to remove excess developer and resist. After initial rinse, continue to hold plate under running water and wipe with a soft, clean pad

or cloth using light, even horizontal and vertical strokes. Dry with clean compressed air or by blotting with a clean, absorbent cloth.

## 6. TOUCH-UP

Examine plate for flaws in the image areas and touch up as needed with staging solution. Many solutions require heating to cure quickly. With Red Top, you can touch up the plate before heating the plate per step 5, then cure both the Red Top coating and staging solution simultaneously. AQ-BLU and Hydro-Solve plates do not require "burn-in" of the coating but can be heated to cure the staging solution.

## 7. WEIGHT

Record initial plate weight on your Magnesium Elektron etching log prior to etching. Scale should be capable of weighing in grams or to the nearest 1/4 oz.

## 8. DESCUM

Red Top: A generally accepted descum formula is 200 ml of 42° Baume nitric acid plus 60 ml of 14° Baume gum arabic, added to water to make 4 liters of working solution. Apply the solution liberally to the surface of the plate and lightly rub with pad or sponge. Rinse and repeat application. Rinse plate thoroughly with water.

AQ-BLU/Hydro-Solve: A light descum with a 1% to 3% solution of nitric acid mixed in water is recommended. Be particularly sensitive with fine line and screen work. Descumming chalk is a good alternative for fine lines and screens. Rinse plate thoroughly with water after descum.

## 9. PLATE PROTECTOR

An application of Express Guard or Revere Wetting Agent is recommended prior to etching to enhance performance of etching bath by preventing oxidation which can cause pimples.

## 10. ETCH

Etch plates according to recommendations of etching machine manufacturers and Magnesium Elektron's technical data sheets.

## 11. REPLENISH BATH

Record plate weight after etching to determine proper acid replenishment. Refer to acid addition chart provided separately. Check dip gauge and restore proper level in bath by adding water or draining excess.

## 12. POST-ETCHING

Wash plate with hot water and trisodium phosphate or detergent solution. Rinse plate with hot water, then dry by blotting, heating or clean air stream. Remove the residual photoresist coating from the plate if desired. Commercially made strippers, solvents or solvent blends can be used to remove Red Top coating. For AQ-BLU or Hydro-Solve, use non-solvent AQ-BLU Top Remover or Hydro-Solve Coating Remover respectively.

## USA

1001 College Street, P.O. Box 258 • Madison, IL 62060 USA  
Tel: 800-851-3145 / +1 618-452-5190 Fax: +1 618-452-3190  
Email: sales@magnesium-elektronusa.com

## EUROPE

P.O. Box 23, Rake Lane, Swinton • Manchester M27 8DD UK  
Tel: +44 (0)161 911 1000 (option 3) Fax: +44 (0)161 911 1341  
Email: gasales@magnesium-elektron.com



**Magnesium Elektron**  
SERVICE & INNOVATION IN GRAPHIC ARTS



[www.magnesium-elektron-gap.com](http://www.magnesium-elektron-gap.com)