

# MMHD

MEGAMASK 6 MIL PHOTORESIST

# MMX

MEGAMASK 10 MIL PHOTORESIST

## Welcome to Glass Engraving Supplies

MM-series photo resist film is photo-imageable sandblast mask that offers an alternative to plotter-cut or hand-cut vinyl. These advanced photo resist films provide deep etching ability similar to vinyl while offering the quick and easy benefits of a photo resist. With out MM-series users can achieve better image quality without the hassle of weeding.

MM-series offers :

- SUPERIOR RESOLUTION COMPARED TO VINYL**
- EXCELLENT CONTRAST FOR EASY POSITIONING**
- HIGH ADHESION**
- DEEP ETCHING CAPABILITY**
- SIMPLE CLEAN-UP (ZERO ADHESIVE RESIDUE)**

MM-series photo resist film comes in :

- MMHD (6 mil) = 150 micron thickness**
- MMX (10 mil) = 250 micron thickness**

Required equipment :

- Computer generated artwork**
- UV exposure unit**
- Washout equipment**
- Sandblasting cabinet and abrasive media**

### SAFETY AND HANDLING

Refer to SDS for safety information.

### STORAGE

Store MM-series film in a cool, dark, low humidity, or air conditioned environment to maximum shelf life. Shelf life is indefinite. Glass Engraving Supplies warranties this product free from defect for 12 months. Extended storage times outside of these conditions can adversely affect film performance with reduced adhesion and/or blast resistance. Do not refrigerate! MM-series should be stored in its original package when not in use. Store rolls and sheets horizontally.

### LIGHT SENSITIVE PRODUCT

MM-series sandblasting film is light sensitive. Although it has some tolerance to white light, for optimum results it is recommended to use the film in yellow safe light conditions until blasted. UV filtered yellow fluorescent lights or UV filter sleeves or white tubes are sufficient. General purpose gold, yellow fluorescent or incandescent lights can be also used.

### ARTWORK

High quality artwork is an **essential factor** for high quality results. ProSuper uses photo positives and photo negatives.

**NOTE : Only black areas of the artwork will be sandblasted.**

### BLACK = BLAST

Generate positive/negative artwork. For best results, artwork should have **dense black** areas with **crisp, clean line edges**. Film or paper positives are acceptable.

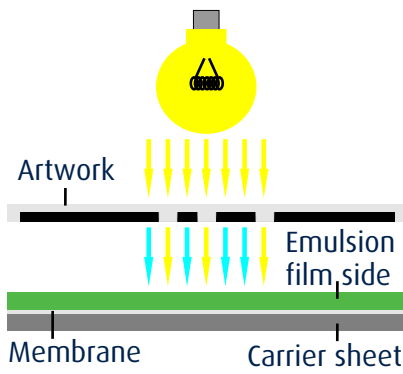
Recommended film positive/negative media includes our **Folex inkjet printing film** or **Folex laser printing film**. A **toner spray** should be used to darken the printed areas when using laser printer. For best quality printout we recommend to use inkjet media.

### FILM EXPOSURE

1. Place the emulsion (toner side) of the artwork against the emulsion side of the film. The emulsion side will face up (towards light source). The emulsion of the film has a duller and softer appearance compared to the carrier side.
2. A vacuum frame/compression frame should be used to ensure firm contact between the artwork and the film during exposure. The higher the detail level of the artwork, the more important it is to use a **vacuum light box**.
3. Be sure to have a non-reflexive black backing opposite your UV-light source to avoid possible reflection causing overexposure. This will end in loss of details and adhesive power.
4. Expose using the suggested time listed below.

Light source	Exposure times
Vacuum UV light box	5 mil = 16 sec. 10 mil = 20 sec.
NOTE : non vacuum UV light box is not recommended	

**NOTE :** Exposure times are suggested only as a guide. All exposure times are approximations and will vary based on type of UV light source used, age of light source and local voltage ranges. Exposure times can also vary based on quality of photo positives used.



**NOTE :** Overexposure can cause image not to washout. Underexposure can cause entire mask to washout prematurely.

### SLIP SHEET REMOVAL

Remove the slip sheet from the emulsion side of the MM-series film (slip sheet has a duller, softer appearance compared to the shiny carrier sheet). The slip sheet can be easily removed from the emulsion by separating it with your fingernail or by using the tape method. To use the tape method, apply a piece of tape to the slip sheet side of the MM-series film, then gently pull apart.

### IMAGE DEVELOPMENT/WASHOUT

1. Remove the slip sheet from the photo resist film. Position the exposed film in an upright vertical position with the emulsion side facing outward, clipping the film to a support plate in the washout area.
2. Wash out the film with water up to 54 C and a washout pistol with **flat spray nozzle**. The warmer the water, the faster the washout. Our **Imagejet pistol** is recommended to use. MM-series washout speed may be increased with a light duty pressure washer up to 2500 PSI (137 bar).
3. Spray in **slow and even motion** until the image area develops clear. Don't concentrate on one spot as delamination of emulsion from the carrier sheet may occur. A gentle, steady sweeping motion from about 20-30 cm is recommended.
4. The entire surface of the film must be washed to ensure adequate adhesion. Wash until the blast area is **completely clear of emulsion**.

### SUGGESTED WASHOUT GUIDELINES

Washout times will be influenced by the amount of detail in the artwork, amount of film being developed, water temperature and amount of water pressure used. **Do not wash** MM-series film under running water from tap.

### DRYING OF MASK

1. Remove **excess water** from mask with a blow dryer or pressurized air. Blotting the film with a lint-free rag is suggested to speed the drying process.
2. At room temperature, hand dry the mask for 45-60 minutes (drying film on a flat surface is also acceptable). When dry, film should be **uniform in colour** and should be **tacky to touch**. High humidity will extend drying time.

**NOTE :** Drying can be accelerated with heat, but over-drying will cause loss of tack level. Extreme heat can cause deformation of the film. **Film dryer will significantly reduce drying time to 10-15 minutes.** When storing processed ProRed masks for later use, apply the mask to our **silicon release paper MaskSaver**.

### IMAGE TRANSFER

1. Simply apply the adhesive side of mask to the substrate by lightly pressing down on the mask. Repositioning might be not possible with UltraPro, because of its strong self-adhesion.
  2. Once the mask is positioned properly, apply firm pressure to the back of the mask using a pressure roller or squeegee to ensure firm contact of the mask to the substrate.
  3. Avoid wrinkles or large air pockets that can cause lack of adhesion resulting blow-offs during sandblasting.
- NOTE :** A good transfer may still result in very small bubbles on the mask surface which won't interfere with either the transfer or blasting.
4. Remove the carrier sheet from the mask by flicking a corner with your fingernail or a knife. Once removed, press down on the image area with your thumb to assure firm contact, paying special attention to fine details and small letters.

**NOTE :** With our **BubbleEx tool** you can easily perforate the membrane on the blasting areas. This helps to remove air pockets, put extra pressure on the mask and increase humidity level. Humidity will increase the adhesive power of MM-series mask. Do not use film in too dry environment. If the mask appears to have lower adhesion, increase the humidity level by adding moisture or steam.

## BLAST

1. MM-series photo resist film can be blasted using a siphon (venturi) or pressure pot sandblast system. **Recommended blasting pressure is :**

**Siphon (venturi) system : 4 - 5 bar**

**Pressure pot system : 5 - 7 bar**

2. Hold the blast gun approx. **15-20 cm** away from the object. Hold the sandblasting gun in **90 degrees angle** against the object. Begin blasting using a **back-and-forth motion** over the entire surface. Keep nozzle moving all the times. **Do not** concentrate on any one area of surface.

3. Depending on the image detail, the grit size should be **60-180 mesh**. Recommended media abrasive is either **white aluminium oxide** or **silicon carbide**. All manufacturer safety precautions should be closely followed.

4. Recommended blasting temperature is 20 C or higher. Blasting in lower temperature may result in loss of adhesion or blow-offs.

5. Stage carving can be accomplished with ProRed photo resist film by putting separation lines around the area you wish to peel away and reblast.

## MASK REMOVAL

Peel the mask from the substrate. Fine pieces of film can be removed by rolling them with your finger tips or with sharp razor blade. **Be careful not to scratch the substrate**. Alternatively soak the object in warm water.

## COLOUR FILLING

Colour filling is a popular way to add a unique touch to sandblasted projects. Once the piece has been sandblasted, use pressurized air to remove any loose abrasive from the etched area. The photo resist will protect the area you do not want to colour. A thin paint coating is preferable since excess paint will dry over the top of mask, causing the paint to pull away from the etched surface during resist removal.

**Any further question?  
We are happy to help you!**