

SR3000™

SR2000™

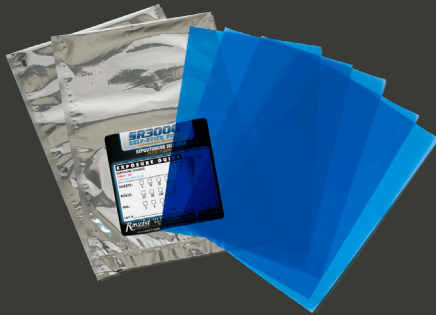
PHOTORESIST



PRODUCT GUIDE

## INTRODUCTION

Congratulations on your purchase. You are on your way to producing sandcarving stencils. SR3000™ or SR2000™ photoresist film allows you to transfer your artwork into photoresist stencils and sandcarve on virtually any surface. The Photoresist stencils are great for sandcarving stone, granite, metal, wood, glass, crystal and much more with this Mask Making Kit.



# RAYZIST

Photomask, Inc. ®

RAYZIST.COM | 800.729.9478

ORDER ONLINE: WWW.RAYZIST.COM/STORE

3 MIL is for fine detailed artwork and halftone photos. A light surface etch is recommended when using 3 MIL material for some of the following surfaces; (but is not limited to) crystal, glass, hard metals, acrylics and plastics.

4 MIL is appropriate for moderately detailed artwork and lettering. A moderate to deep engraving is recommended when using 4 MIL photoresist. This material provides the best of both worlds and can be used on any surface.

5 MIL is for bolder lettering and artwork. Moderate to deep stage carving is recommended when using 5 MIL photoresist; works best with wine bottles and any hard surface.

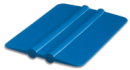
# LETRALITE KIT COMPONENTS



Letralite  
Unit



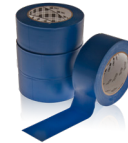
Photoresist  
Film Sheets



Burnisher



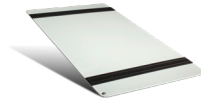
Wire Wheel  
Brush



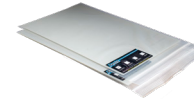
Masking  
Tape



Washout  
Hose



Washout  
Board



Cover  
Paper



Inkjet  
Film

OR



Laser  
Film

## ARTWORK

You will need to have a graphics program such as Adobe Illustrator or Corel Draw to produce black and white vector artwork (black = blast).

Steps to generate black and white artwork in a graphics program (vector images only).

1. Select artwork image and change to CMYK ( CMY @ 0% & K @ 100%)  
DO NOT PRINT IN RGB.
2. Place the correct print film in printer and print artwork.
3. Inkjet print film is used with inkjet printers and has one print side. This side is dull or coated.
4. Laser print film is used with monochrome laser printers. You can print on either side. A darkening enhancer such as Toner Aide is usually required for laser prints for optimal opacity. Color Laser printers: NOT RECOMMENDED.

- Front Blast – Positives or negatives should be right-reading emulsion (toner or ink) side up for front blasting.
- Back Blast – Positives or negatives should be right-reading emulsion (toner or ink) side down for back blasting.

REMEMBER: Black = Blast

NOTE: Invert image in graphics program before printing.

JPEG Image



Vector Artwork



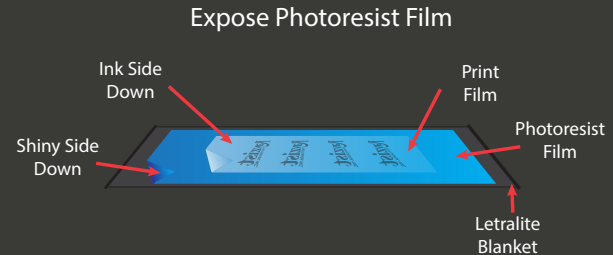
## IMAGE TRANSFER

Work under florescent lights for 1 - 3 minutes or no time limit under UV safe yellow/red lights. SR3000™ film is a light sensitive product. For optimum results film should be handled in safe lighting conditions.

1. Place the SR3000™ glossy side down on the black blanket. The dull side of the SR3000™ will face up.
2. Place the emulsion (toner or ink side) of the artwork against the dull side of the SR3000™. The emulsion side of the SR3000™ film has a duller appearance compared to the carrier side.
3. A vacuum frame or compression frame (such as a Letralite Blanket) should be used to ensure firm contact between the artwork and the film during exposure.
4. Be sure to have a non-reflective black blanket opposite your UV light source to avoid possible reflection causing overexposure.

5. Expose using the suggested exposure times listed.

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.



### SR3000™ 3MIL, 4MIL & 5MIL

UV Light Source	Exposure Time
15 - 25-watt Letralite Unit	20 seconds
800 - 1000 watt Metal Halide or Mercury Vapor UV bulb	4 - 8 units

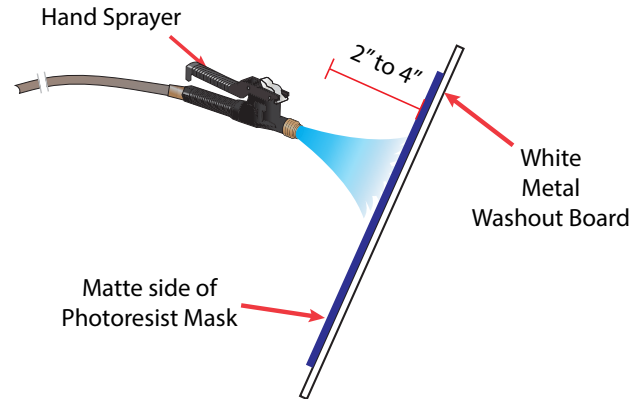
## WASHOUT

1. Position the exposed SR3000™ in an upright vertical position with the emulsion (matte / dull) side facing outward, use a ¼” of the magnet to attach the film to the white washout metal board in a sink (washout area must be free of UV Light, such as sunlight).
2. Washout SR3000™ with water up to 130°F. The warmer the water, the faster the washout. SR3000™ can be processed using the Rayzist Hand Sprayer, which uses a brass fan spray nozzle producing 60 - 90psi.
3. To use the Rayzist Hand Sprayer, spray 2” to 4” (max) away from exposed film in a slow, up and down even stroke until the image area develops clear. Do not focus on one particular area of the image, wash in strokes to ensure an even wash.
4. Wash until the image area is white (clear) against the white washout board. Over washing will occur if washing for over

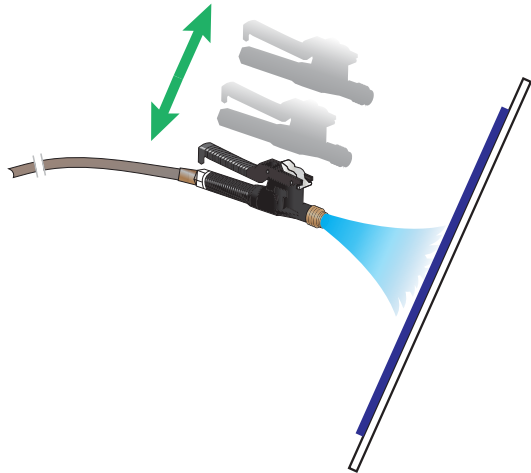
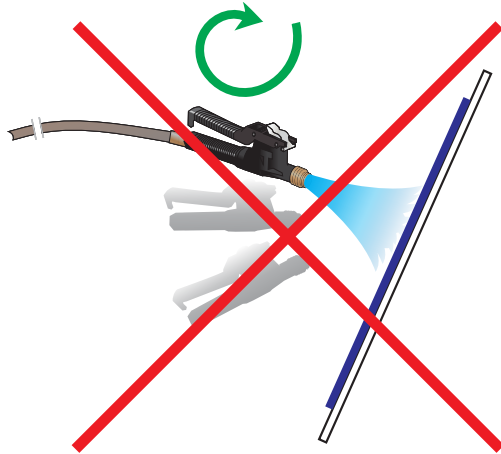
90 seconds. Over washing will cause the film to be saturated with water, and possible shifting of image area (such as lines)

5. Once film is washed, remove magnet in an upward motion. Do not let the dull side of the mask touch any surface, as the dull side will become very sticky.

### Hand Spraying Method



▶ Video Available at: [www.rayzist.com/dev](http://www.rayzist.com/dev)



## SUGGESTED WASHOUT TIMES

### SR3000™ 3MIL, 4MIL & 5MIL

Equipment Used	SR3000™ 3MIL, 4MIL, & 5MIL	SR2000™ 6MIL	SR2000™ 9MIL
Rayzist Hand Sprayer	1:00 - 1:30	1:45 - 2:00	Automatic Washout System Recommended
1020 Washout System*	0:45 - 1:15	1:30 - 2:00	Automatic Washout System Recommended
1232 Automatic Washout System	0:40 - 0:55	1:00 - 1:30	2:00
1650 Automatic Washout System	0:40 - 0:55	1:00 - 1:30	1:30 - 2:00

\*Water Pressure @60psi

NOTE: Washout times by either method 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 SR3000™ outside, under running water from a faucet or with a sponge.

## DRY

1. Remove excess water from mask to accelerate drying times.
2. Dry the photomask for 20 - 40 minutes at room temperature; photomask should be uniform in color. High humidity will extend the drying time. At 100°F, drying will take approximately 15 minutes. For best results, return photomask(s) to room temperature before applying.
3. Photomask(s) can be laid flat (carrier / glossy side down), or hung to dry.
4. Photomask(s) can also be put in a film dryer to significantly reduce drying times.

When storing processed SR3000™ for later use, apply Rayzist's Cover Paper. Photomasks can be stored indefinitely with Rayzist's Cover Paper.

## APPLY

SR3000™ is repositionable. Simply apply the photomask to a clean substrate by pressing down on the photomask. If repositioning is needed remove the photomask and realign as many times as needed.

SR2000™ requires an adhesive. To apply RZ2, brush on with a paint brush to the matte / dull side of the photomask. Allow adhesive to dry clear.

NOTE: If using SR3000™ for natural stone or unpolished surfaces, apply RZ2 for more adhesion.

For production spray guns use RZ3 adhesive.

Once the photomask is positioned properly, apply firm pressure to the back of the photomask using a plastic burnisher to ensure the photomask is secured to the substrate.

▶ Video Available at: [www.rayzist.com/app](http://www.rayzist.com/app)



Remove clear carrier from photomask. Use the corner of a plastic burnisher to separate the carrier.

NOTE: For maximum flexibility remove clear carrier prior to applying to substrate. Removing carrier will make the photomask flexible and able to apply easily to curve surfaces.

### **WIRE WHEEL BRUSH**

Place Wire Wheel Brush on photomask and roll over entire surface one to two times with gentle pressure. The Wire Wheel Brush will perforate the membrane and release trapped air between photomask and the substrate. This secondary application tool is recommended, especially with negative (open areas) artwork. Use of the tool will avoid lifting of the photomask in open areas of the mask.

▶ Video Available at: [www.rayzist.com/wire](http://www.rayzist.com/wire)

### **TAPE**

Apply sandblast tape to areas outside the mask to protect from over blast.

NOTE: Using painters tape may result in blast through as painters tape is not blast resistant.

### **SANDCARVE**

1. Hold the end of the nozzle (position hand similar to holding a pencil) 4" - 6" away from substrate and perpendicular to its surface.
2. Recommended blasting pressure for a pressure pot sandblast system is 30 - 40 psi. A siphon (or suction) sandblast system should not exceed 80psi.
3. Grit size should be 120 or finer depending on the image detail. (Recommended abrasive media is either aluminum oxide or silicon carbide 150 grit). All manufacturer safety precautions should be closely followed.

4. Blasting in extreme temperatures may result in loss of adhesion from the mask to the substrate.
5. Stage carving can be accomplished with SR2000™ or SR3000™ by adding separation lines around the area you wish to peel away and blast or shape.

## PAINT FILL

Apply paint to etched area prior to removing photomask. If using spray paint, spray light coats from different angles to ensure proper coverage and avoid over painting.

## CLEAN UP

Use one of the following methods:

- Peel the mask from the substrate.
- Rinse mask under running water and peel mask from the substrate.
- Soak the item in water from 3 - 10 minutes. The mask will start to lift off the substrate.

## TECH SUPPORT

*SR3000™ does not appear to be tacky.*

1. Add moisture to the dull side of the SR3000™ photomask. Moisture will bring the tack back into the photomask. Ring out a blotting towel or lint free cloth and lay flat on table, apply matte / dull side of mask to damp cloth or lightly mist water on the back matte / dull side of the photomask and let dry. Photomask will feel tacky again. Once tacky, apply to substrate.
2. Once the photomask is completely dry and will not be used for an hour or longer, apply Rayzist's Cover Paper (glossy side of Cover Paper) to the tacky side of the photomask. This will keep the tacky side clean and tacky. Photomask left uncovered for several hours can appear to dry out. Photomasks can be laid flat (carrier / glossy side down) or hung to dry.

▶ Video Available at: [www.rayzist.com/tack](http://www.rayzist.com/tack)

3. Dry or cold weather can create a no tack feel to SR3000™ Photomask. Add moisture to the dull side of the Photomask to reactivate the tack with Rayzist's Cover Paper.

***SR3000™ Photoresist film is not washing out properly***

1. Check expiration date of SR3000™.
2. Do not overexpose the photoresist film. Expose at 20 seconds on the Letralite unit. Over exposing the film will cause UV curing of the image area and cause either long washout or inability to washout the film .
3. Do not expose or washout the film outside. The UV light will immediately expose the film and no image will appear during washout.
4. Confirm the artwork is opaque on print film. Hold the artwork against the cylinder of the Letralite unit, if light is coming through the artwork, the print is too light and needs to be darkened.
5. Use the Rayzist Hand Sprayer for best results. Rayzist Hand Sprayer provides a pressurized fan spray to develop detailed artwork. The distance between the Hand Sprayer and photoresist film should be 2” - 4” away from mask.
6. To determine wash time of SR3000™, cut a small strip of SR3000™ film and place on washout board with no exposure. Film should rapidly dissolve. If film does not rapidly dissolve, the film has been exposed.



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