

UltraVinyl™

No-Weed Sandblast Mask

PATENT PENDING

UltraVinyl is the photo-imageable sandblast mask alternative to plotter-cut or hand-cut vinyl. UltraVinyl photo resist film is an advanced film that provides deep etching ability similar to vinyl while offering the quick and easy process of a photo resist. With UltraVinyl, users can achieve finer, better image quality without the hassle of weeding.

MATERIALS NEEDED

Required

Exposure Device	Contact PhotoBrasive®
Washout Equipment	Systems for a list of
Abrasive 60-120 Mesh Size	recommended equipment
Blast Equipment	and supplies.

SAFETY CONSIDERATIONS

Refer to MSDS for safety information.

ARTWORK

1. Generate a positive (negative) of artwork. For best results, artwork should have dense black areas, with crisp, clean line edges.

- Acceptable **film media** includes AccuArt™ 2 or AccuBlack inkjet film, stat camera or image setter. *Transparencies are not recommended.*

Front Blast

Positives (negatives) should be right-reading emulsion (toner) **side down** for **front blasting**.

Back Blast

Positives (negatives) should be right-reading emulsion **side up** for **back blasting**.

With UltraVinyl, artwork should be produced in a way that black = blast.

UltraVinyl photo resist film comes in 10 mil (250 micron) thickness, and is available in both rolls and cut sheets.

- Excellent Resolution—achieve finer details and sharper images than vinyl
- No weeding
- Deep etching ability
- Superior durability

LIGHT SENSITIVE PRODUCT

UltraVinyl film is light-sensitive during film exposure and image development. Although UltraVinyl has some tolerance to white light, it should be used in yellow or safe light conditions for optimum results. General purpose gold or yellow fluorescent or incandescent lights, red ortho-safelights or yellow bug lights can also be used.

STORAGE

- Store packaged film in a cool, dry area.
- Do not refrigerate.
- Shelf life is indefinite. PhotoBrasive Systems warrants this product free from defects for 12 months.



Film media printed from an inkjet printer. **Positive** artwork is shown on the left. **Negative** artwork is shown on the right.

FILM EXPOSURE

1. Place the emulsion/toner side of the artwork against the emulsion side of the UltraVinyl film. The emulsion side of the UltraVinyl film is duller in appearance than the carrier side.

2. A vacuum frame should be used to assure firm contact between the artwork and the UltraVinyl film during exposure. Compression frames are also acceptable.

3. Be sure to have a non-reflective black backing opposite your UV light source to avoid possible reflection causing overexposure.

NOTE: Overexposure can cause image not to washout; whereas underexposure can cause entire mask to washout prematurely.



Suggested Light Sources & Exposure Times

Light Source	Distance	Exposure Times
5 KW Metal Halide	40 in/100 cm	25 units
26-1KS	18 in/45 cm	60 units
Letralite	NA	3 min.

NOTE: Exposure times are suggested guidelines only. 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 type of photopositive used. Contact PhotoBrasive Systems for additional exposure information.

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IMAGE DEVELOPMENT

1. Position the exposed film in an upright vertical position with the emulsion (dull) side facing outward, clipping the film to a support plate in the washout area.
2. Wash out film with water up to 100°F (38° C). The warmer the water the faster the washout. UltraVinyl must be processed using a pressure washer between 400–1200 psi (28-83 bar).
3. Spray in a slow and even motion until the image area develops clear. Do not concentrate on one spot as delamination of emulsion from the carrier sheet may occur. A gentle, steady sweeping motion from about 8–12 inches (20–30 cm) away is recommended.

Suggested Washout Guidelines

Washout times are influenced by the amount of artwork detail (high detail = longer), amount of film being developed, water temperature and pressure used. **Do not** wash UltraVinyl film under running water from a faucet.



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, hang dry the mask for 45-60 minutes (drying film on a flat surface is also acceptable). *When dry, film should be uniform in color and should not be tacky to the touch.* High humidity will extend drying time to 90 minutes.

If available, a drying chamber with heated circulating air will significantly reduce drying time. At 100°F (49°C), drying will take approximately 20-30 minutes.



IMAGE TRANSFER

1. Remove the carrier sheet (shiny side) of the film. This will reveal the adhesive layer. **Tip:** For easier carrier sheet removal, apply a piece of masking tape to the emulsion (dull) side of the film and pull apart.
2. Apply the film to the substrate using a roller. Take special care to avoid wrinkles or air pockets. Air pockets under the mask may cause lack of adhesion, resulting in blow-offs during blasting.
3. To remove air bubbles, reposition the mask or pop it with a pin and tape over the area to avoid blast through.



BLAST

1. Hold the blast gun 6-8 inches (15–20 cm) away from the object and perpendicular to its surface.
2. Recommended maximum pressure for a pressure-pot sandblast system is 80-100 psi (5-7 bar). Siphon systems are not recommended.
3. Grit size should be 60-120 mesh. Recommended abrasive media is either pure aluminum oxide or silicon carbide. Other abrasive should be tested prior to use. All manufacturer safety precautions should be closely followed.
4. Recommended blasting temperature is 68°F (20°C) or higher.



REMOVE MASK

Peel the mask from the substrate. Fine pieces of film can be removed by rolling them off with your finger tips.

COLOR FILLING

Color 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 abrasive from the etched area. The photo resist will protect the areas you do not want to color. Spraying the mask with a thin paint coating is preferable since excess paint will dry over the top of the photo resist, allowing the paint to pull away from the etched surface during resist removal. Please contact your PhotoBrasive® representative for a detailed description on benefits and use of color filling and a complete list of recommended paints.