

PBVinyl™

10 Mil Sandblast Mask

PBVinyl Photoresist Film is an advanced film that provides deep etching capability similar to vinyl while offering the quick and easy process of a photoresist. With UltraVinyl, users can achieve finer, better image quality without the hassle of weeding. PBVinyl Film offers:

- Excellent Resolution - achieve finer details and sharper images than vinyl
- No weeding
- Deep etching capability
- Superior durability
- Water Soluble - remove film easily after etching

PBVinyl Photoresist Film: 10 mil (250 micron) thickness and is available in roll and sheet formats.

STORAGE

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

SAFETY CONSIDERATIONS

[REFER TO SDS](#) for safety information. Wear eye and hand protection.

MATERIALS NEEDED

Required

- Phototool
- Exposure Device
- PBVinyl photoresist film/masks
- Washout Equipment
- Adhesive
- Blast Equipment
- Substrates

Recommended

- [Wire Wheel](#)
- [Smart Jig](#)
- [Squeegee](#)
- Dust-free Cloth
- Glass Cleaner



LIGHT SENSITIVE PRODUCT

PBVinyl Film is a light sensitive product, until fully developed (*after step 3*). PBVinyl Film has some tolerance to white light, however, it should be used in yellow or safe light conditions for optimum results. Safe light sources include general purpose gold or yellow fluorescent or incandescent lights, red ortho-safe lights, or yellow *bug lights*. If safe light sources are unavailable, white LED room lights are preferable over white incandescent or fluorescent lighting during processing.

Warning: Exposure to direct or indirect sunlight will partially or completely expose PBVinyl Film.

STEP ONE: CREATE ARTWORK/PHOTOTOOL



Artwork should be created as a dense black image, with crisp, clean line edges. The highest quality and best value phototools are created by inkjet printing artwork onto specially coated inkjet film. AccuBlack® Inkjet film is recommended.

Alternative Technologies for phototool creation:

- Both stat cameras and image setters offer high quality at a premium price.
- Paper positive media, like laser-printed vellums or Positive FX Drafting Film, can be less expensive, but it offers only marginal performance.

NOTE: PBVinyl Film uses a photopositive process, meaning the black portions of the phototool will ultimately be engraved. **“Black = Blast”**

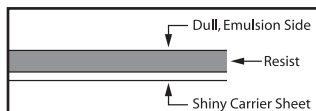
For further information and basic instruction on artwork setup and advanced decorative techniques such as back blasting, stage carving, color-filling, and more, visit us online at ikonicsimaging.com/artwork-s3-faq or scan the code below.

PBVinyl Film is recommended for use with the color-fill technique or with the stage carve technique.

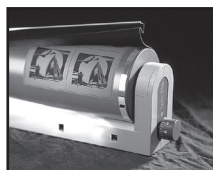


STEP TWO: EXPOSE

1. Position phototool and PBVinyl film in exposure unit. Place the printed side of the phototool against the dull emulsion side of the PBVinyl film in the exposure unit, so that the phototool is between the light source and the PBVinyl film. **HINT:** *UltraVinyl's emulsion side is duller in appearance than its shiny carrier sheet side.*



2. An ultraviolet (UV) exposure unit with a vacuum frame should be used to assure firm contact between the artwork and the PBVinyl film during exposure. For information on UV Exposure units such as the Quick Image Exposure unit, please contact IKONICS Imaging.



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

4. Expose using the suggested times listed.

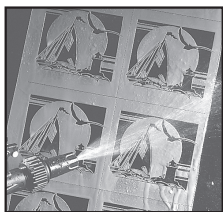
SUGGESTED LIGHT SOURCES & EXPOSURE TIMES

Light Source	Distance	Exposure Time
5 KW Metal Halide	40 in/100cm	15 units
26-1KS (1KW)	18 in/45cm	40 units
Letralite	n/a	1.5 min
QuickImage	n/a	8-10 sec

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 the type of phototool used. Contact IKONICS Imaging for additional exposure information.

NOTE: The effects of improper exposure will be seen during image development (*step 3*). Overexposure prevents the image from washing out completely. Underexposure causes loss of fine details or the entire stencil to wash out prematurely.

STEP THREE: IMAGE DEVELOPMENT



1. Position the exposed film in an upright vertical position. Secure the film with a clip so that the emulsion (dull) side can be sprayed without letting the force of the water dislodge the film from its vertical position.

2. Use heated water with pressurized spray. The warmer the water, the faster the washout time, but water temperature should not exceed 100°F (38° C). PBVinyl Film is often developed with a pressure washer which works best with heated water and the flat spray attachment (400-1200 psi / 28-83 bar).

3. Spray with slow, even passes over the entirety of the film until the image area becomes transparent. A gentle, steady sweeping motion from about 8–12 inches (20–30 cm) away is recommended for fine detail. **Caution:** Directing the spray to one isolated spot may delaminate the cured emulsion from the carrier sheet.

SUGGESTED WASHOUT GUIDELINES

NOTE:

Due to the thickness of PBVinyl, washout times can vary widely. Washout times should be determined on an individual basis, based on the washout method chosen. Times will be influenced by:

- amount of detail in the artwork (high detail = longer)
- amount of stencil being developed
- water temperature and pressure used

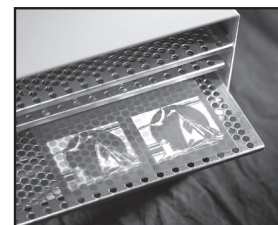
Do not wash PBVinyl Film under running water from a faucet, as it may affect stencil integrity.

STEP FOUR: DRYING

1. Use pressurized air or blow dryer to remove excess water from the film to help accelerate drying. Blotting the film with a lint-free rag is suggested to speed the drying process.

2. Let film dry for 45-60 minutes at room temperature.
- High humidity will extend the drying time to ~90 minutes.
 - When film returns to its original uniform color and is not tacky, it is dry.

If available, a drying chamber with heated circulating air will significantly reduce the drying time. At temperatures of 100-160°F (49°-71°C), drying will take approximately 20-30 minutes. Drying will vary with humidity and air circulation. Film should return to room temperature before proceeding to the next step.



STEP FIVE: BLASTABLE ADHESIVE APPLICATION

(see the Blastable Adhesives user guide for detailed adhesive instructions. Two methods can be used, brush-on and spray-on, the brush-on method is briefly described below.)

1. Apply a thin, even coat of blastable adhesive to the substrate using a foam brush.

NOTE: The adhesive has a white, milky color during application and dries to a clear finish. Drying takes ~10 minutes. After the adhesive turns clear, there is an approximate two hour window to apply the mask to the adhesive before it loses tack.

2. Using a squeegee or roller to prevent large wrinkles or air pockets under the mask, apply the mask to the adhesive.

NOTE: Once the mask is placed on the adhesive coated area, bonding between the mask and substrate will improve over time. Object(s) can sit overnight or for days without causing tack deterioration.

STEP SIX: MASK APPLICATION

1. Once the mask is properly positioned, apply firm pressure to the back of the masking material using a plastic burnisher. This ensures firm contact of the mask to the adhesive and substrate.

2. The shiny carrier sheet will still be covering the film. Remove the carrier by flicking a corner with your fingernail or an X-ACTO® knife. After removing the carrier, press down on the image area with your thumb to ensure firm contact. Pay special attention to anchor fine details and small lettering.

NOTE: Avoid wrinkles or large air pockets. Air pockets under the film may reduce adhesion, resulting in blow-offs during blasting. If unable to remove air bubble, simply pop the bubble with a pin and tape over the pinhole to avoid blast through.

A good transfer may still result if very small bubbles under the film surface exist. Tiny bubbles typically do not compromise the integrity of the film during blasting.



STEP SEVEN: BLASTING



1. Hold the blast gun 6-8 inches (15–20 cm) away from the object at an angle perpendicular to its surface.
2. Recommended maximum pressure for a pressure-pot sandblast system is 60-70 psi (4.5 bar). A siphon (or suction) sandblast system should not exceed 80 psi (5.5 bar).

3. Grit size should be 120-150 mesh or finer, depending on the image detail. Recommended abrasive media is either pure aluminum oxide or silicon carbide. All manufacturer safety precautions should be closely followed.

4. Recommended blasting temperature is 68°F (20°C) or higher. Blasting in lower temperatures may result in loss of adhesion or blow-offs.

NOTE: If the color-fill decorative technique is used, it should be completed before mask removal and mask should not be removed until color-fill medium is completely dry.

STEP EIGHT: MASK REMOVAL

Peel the masking material from the substrate. Fine pieces of masking material can be removed by rolling them off with your fingertips. **CAUTION:** Be careful not to scratch the substrate.



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