

PB VINYL PHOTO RESIST FILM

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

- Excellent resolution - achieve finer details and sharper images than vinyl
- No weeding
- Deep etching ability
- Superior durability
- Water soluble - remove film easily after etching

LIGHT SENSITIVE PRODUCT

PB Vinyl film is a light sensitive product. Although PB Vinyl 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.

PB Vinyl photo resist film comes in 10 mil thickness and is available in both rolls and cut sheets.

ARTWORK

1. Generate a positive (negative) of artwork. For best results, positives should have dense black areas, with crisp, clean line edges. Film or paper positives are acceptable.
- Acceptable **film positive media** includes AccuArt™ 3 inkjet film, stat camera or image setter.

FILM EXPOSURE

1. Place the emulsion/toner side of the artwork against the emulsion side of the PB Vinyl film. The emulsion side has a duller appearance compared to the carrier side.
2. A vacuum frame should be used to assure firm contact between the artwork and the PB Vinyl film during exposure.
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; where as underexposure can cause entire mask to washout prematurely.

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. PB Vinyl must be processed using a pressure washer between 400–1200 psi (28-83 bar).

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,*

PB Vinyl™

10 Mil Sandblast Mask

MATERIALS NEEDED

Required

Exposure Device
Washout Equipment
Adhesive
Blast Equipment

Recommended

Contact IKONICS IMAGING for a list of recommended equipment and supplies.

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 MSDS for safety information.

Front Blast

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



Back Blast

Positives should be right-reading emulsion side down for back blasting. With PB Vinyl, artwork should be produced in a way that black = blast.

Suggested Light Sources & Exposure Times

Light Source	Distance	Exposure Times 10 mil
5 KW Metal Halide	40 in/100 cm	15 sec
26-1KS	18 in/45 cm	40 units
Letralite	N/A	1.5 min

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 type of photopositive used. Contact IKONICS IMAGING for additional exposure information.

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 will be influenced by the amount of detail in the artwork (high detail = longer), amount of film being developed, water temperature and pressure used. **Do not** wash PB Vinyl film under running water from a faucet.

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.

USER'S GUIDE

APPLYING ADHESIVE

IKONICS IMAGING has two product options for application adhesives: Spray-On Adhesive or Brush-On Adhesive.

Method One: Spray-On Adhesive Method

IKONICS IMAGING Spray-On Adhesive is a water-soluble adhesive that can be applied by spraying it **directly on the photo resist mask or substrate** using a conventional paint sprayer (or similar type of air gun) with a minimum of 25 pounds of air pressure.

1. To apply adhesive to the mask, place the mask in a vertical position with the emulsion side of the film facing toward you.
2. Set the spray nozzle to achieve a fine mist and apply a thin, even coating of adhesive directly to the mask. Be careful not to apply the adhesive too thickly. Excessive build-up of adhesive may cause uneven blasting.

Method Two: Brush-On Adhesive

IKONICS IMAGING Brush-On Adhesive is water-soluble and can be applied by brushing it directly onto the substrate.

1. Apply a thin, even coat using a foam brush.
2. The adhesive is a white, milky color during application and dries to a clear finish. Drying takes approximately 10 minutes.
3. After the adhesive turns clear, there is an approximate two hour window to apply the mask to the adhesive before loss of tack occurs.

IMAGE TRANSFER

After applying the mask, check for the following prior to blasting:

- Avoid wrinkles or large air pockets. Air pockets under the mask may cause lack of adhesion, resulting in blow-offs during blasting. If repositioning is impossible in order to remove an air bubble, 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 60-70 psi (4.5 bar). A siphon (or suction) sandblast system should not exceed 80 psi (5.5 bar).

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 loose abrasive from the etched area. The photo resist will protect the areas you do not want to color. A thin paint coating is

3. The film will have a slight sheen when adhesive is applied correctly. Allow the adhesive to dry for 3-5 minutes or until it appears clear. Note: Over-drying will result in loss of tack. When dry, apply to the substrate.

4. When finished, store adhesive with the cap/spout closed at room temperature or cooler.

5. Remove any excess adhesive from the sprayer after use. The adhesive is water soluble and should clean-up easily after use. Failure to properly clean the sprayer after use could lead to clogging of the spray nozzle.

NOTE: IKONICS IMAGING recommends the use of gloves and a dust mask when spraying adhesive. Use in a well ventilated area.

4. Apply the mask to the adhesive. Use a squeegee or roller to prevent large wrinkles or air pockets under the mask.

5. 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.

6. Store adhesive with the cap/spout closed at room temperature. To prevent contamination, never pour used adhesive back into the container for re-use.

- Apply pressure to the front of the mask to assure firm contact of mask to the substrate.

3. Grit size should be 120-150 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.

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 IKONICS IMAGING representative for a detailed description on benefits and use of color filling and a complete list of recommended paints.

United States Patent No. 5,427,890
United States Patent No. 5,629,132
Canadian Patent No. 2,041,521



IKONICS Imaging, 4832 Grand Ave., Duluth, MN 55807, USA
PHONE 218-628-2002 **TOLL FREE** 800-643-1037 **FAX** 218-628-2064
EMAIL info@ikonicsimaging.com **WEB** www.ikonicsimaging.com