ROHM AND HAAS | ELECTRONIC MATERIALS

PHOTOPOSIT™ SN 68H PHOTORESIST

For Imaging Materials Applications

Regional Product Availability			
N. America	Japan/Korea	Asia	Europe
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DESCRIPTION

Photoposit SN 68H Photoresist, developed to address industry demands for a robust, high-yielding, fine-line, low-cost photoresist that can be utilized in today's manual and automatic exposure equipment at optimum productivity levels. Photoposit SN 68H Photoresist has been optimized for use on double-sided roller coaters and is supplied at a viscosity appropriate for roller coating.

The dried resist film is stackable, has a fast photospeed and has the desired flexibility and durability to allow for easy handling. Photoposit SN 68H Photoresist is most sensitive in the 365 nm region. The resist is developed in convectional conveyorized spray equipment using REsolve™ Developer 9033. It is compatible with conventional acid etchants and is easily stripped with SURFACEstrip™ 448 Resist Stripper.

FEATURES

- Unmatched resistance to mechanical and handling damage
- Fast photospeed—exposure times as low as 2 seconds
- 48 hours of stackability
- Excellent chemical resistance to acid-based etchants
- Excellent coating rheology

BENEFITS

- Improved yield
- Resolution capability 25 micron lines and spaces
- Significant savings over dry film
- Reduced labor and waste costs
- No tack at exposure
- Extremely wide processing window
- Very high resolution capability
- Low foaming. Little, or no need for the addition of antifoam

PRE-CLEANING

Prior to coating with Photoposit SN 68H Photoresist, the substrate must be cleaned to remove impurities, such as grease, oxides, conversion coatings, particulate matter and residual moisture.

It is recommended that all materials be edge beveled to minimize contamination with debris from panel edges.

Double-treated copper foil may be processed directly following a water rinse, thorough dry and panel clean.

Standard copper foils can be cleaned either mechanically or chemically. While pumice has been used with good success, we recommend the use of the following chemical cleaning process for standard copper foils.

PREPOSIT™ SPRAY CLEANER 744

To remove fingerprints and oils from copper foil, we recommend the use of Preposit Spray Cleaner 744 operated in conventional conveyorized spray equipment. Typical conditions are 52–57°C (125–135°F) with a contact time of 30–60 seconds, followed by a thorough rinse. Consult the data sheet for more information.

PREPOSIT ETCH 748

To remove oxides and provide a clean copper surface, we recommend the use of Preposit Etch 748 operated in conventional conveyorized spray equipment. Total copper removal should be 0.25–1.00 microns (10–40 microinches). Typical conditions are 24–35°C (75–95°F) with a contact time of 30–90 seconds, followed by a thorough rinse. Consult the data sheet for more information.

D.I. WATER RINSE AND DRY

Following chemical cleaning, parts should be thoroughly rinsed, with the final rinse being deionized water. Parts must then be thoroughly dried to remove all residual moisture.

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PANEL CLEAN

A final panel clean step is necessary to remove any remaining debris that may be present before entering the coating area. Typically, either tacky roll or combination brush/vacuum systems are preferred.

RESIST COATING

Photoposit SN 68H Photoresist is applied by roller coating. Specific conditions are given below. Viscosity adjustments should be made through additions of Photoposit Type P Thinner. It is important that the area surrounding the resist coater be maintained as a clean room at Class 1,000 conditions or better.

ROLLER COATING

The following parameters are typical for this method of application:

Roller Thread:	Horizontal: 46–48 TPI V-groove Vertical: 410–430 µm pitch **Note:** Roll thread specifications vary among roller coater equipment manufacturers. Please contact your Rohm and Haas Electronic Materials representative for advice.
Roller Material:	50 Shore, EPDM
Resist Viscosity (typ.):	1,750–2,150 cP
Resist Thickness (dry):	8–12 micron (optimum 10 micron) 0.3–0.5 mil (optimum 0.4 mil)

DRYING

Photoposit SN 68H Photoresist can be successfully dried in a variety of ovens. Due to the wide variety of oven design available, it is impossible to give specific recommendations. Consult your Rohm and Haas Electronic Materials representative for more details.

When establishing drying parameters, it is important to work with a range of core thicknesses and determine the limits for both under-drying and over-drying. Panels that are under-dried will exhibit tack, while panels that are over-dried will be difficult to develop. Photoposit SN 68H Photoresist has a wide drying process window, and one drying condition can often be established for most core sizes.

EXPOSURE

The Photoposit SN 68H Photoresist is most sensitive in the 365 nm region, but has broad spectral sensitivity between 340–440 nm. Using an exposure dose of 20–40 mJ/cm^2 along with nominal developing conditions, a copper step 7–9 should be held when using a 21 step Stouffer Step Tablet.

Photoposit SN 68H Photoresist displays a latent image following exposure.

RESOLVE DEVELOPER 9033

REsolve Developer 9033 is used to develop Photoposit SN 68H Photoresist, operated in conventional conveyorized spray equipment. The resist should be developed to achieve a 30–50% breakpoint.

Please consult the REsolve Developer 9033 data sheet for more information.

ETCHING

Photoposit SN 68H Photoresist is designed to be resistant to acid etchants, such as cupric and ferric chloride. Due to the thinness of the resist film, the speed of etching will be increased by 20 to 40% compared to dry film.

SURFACESTRIP 448 RESIST STRIPPER

We recommend the use of SURFACEstrip 448 Resist Stripper to remove the Photoposit SN 68H Photoresist. Operate the bath at between 54–60°C (130–140°F) to fully remove the resist film in 45–60 seconds using convectional conveyorized spray equipment.

Please consult the SURFACEstrip 448 Resist Stripper data sheet for more information.

ANTIFOAM 2094 FOAM SUPPRESSANT

Antifoam 2094 is a very effective foam suppressant, formulated to be used in the REsolve Developer 9033 and SURFACEstrip 448 Resist Stripper solutions. Antifoam 2094 foam suppressant should be added as necessary to control foaming. As a guide, add a concentration of 0.5 ml/liter of bath volume.

Please consult the Antifoam 2094 Foam Suppressant datasheet for more information.

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COMPATIBLE MATERIALS

Materials that are compatible with Photoposit SN 68H Photoresist include stainless steel, glass, ceramic, nylon, unfilled polypropylene, high-density polyethylene, EPDM and PTFE.

YIELD

The estimated yield for Photoposit SN 68H Photoresist is 1,300 surface ft^2/gal. at an average dry film thickness of 10 micron (0.4 mil).

PRODUCT DATA

Photoposit SN 68H Photoresist, conforms to these typical properties:

S.G. (at 25°C):	1.05
Appearance:	Greenish-blue solution
Viscosity (at 25°C):	1,750–2,150 cP
Percent Solids (typical):	41%
Flash Point (PMCC):	42°C

HANDLING PRECAUTIONS

Before using this product, consult the Material Safety Data Sheet (MSDS)/Safety Data Sheet (SDS) for details on product hazards, recommended handling precautions and product storage.

CAUTION! Keep combustible and/or flammable products and their vapors away from heat, sparks, flames and other sources of ignition including static discharge. Processing or operating at temperatures near or above product flashpoint may pose a fire hazard. Use appropriate grounding and bonding techniques to manage static discharge hazards.

CAUTION! Failure to maintain proper volume level when using immersion heaters can expose tank and solution to excessive heat resulting in a possible combustion hazard, particularly when plastic tanks are used.

STORAGE

Store products in tightly closed original containers at temperatures recommended on the product label.

DISPOSAL CONSIDERATIONS

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Rohm and Haas Electronic Materials Technical Representative for more information.

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