

## POLY/Solv RS-50

### A Liquid Concentrate Designed to Strip Fully Aqueous Dry Films

#### Product Description

POLY/Solv RS-50 (RS-50) is a concentrated solution designed to economically and efficiently strip all commercially available, fully aqueous dry film resists. RS-50's unique formulation does not include sodium or potassium hydroxide, glycol ethers, or alcohols (including methanol). As such, RS-50 is easier to waste treat and exhibits less odor than many competitive products.

RS-50 was formulated to produce stripped resist particles averaging 0.2 - 0.5  $\mu$ m in diameter, facilitating resist particulate filtration with a rotary drum filtrator or equivalent. RS-50 also incorporates a unique blend of copper AND SOLDER inhibitor compounds to reduce the attack of solder on hard boards and leave a bright, stable, oxide free copper surface.

#### Performance Features

- Exhibits minimal chemical and/or galvanic corrosion attack on solder simplifying waste treatment of spent solutions and resist particulate.
- RS-50 is highly concentrated and is effective at concentrations as low as 5% in spray applications.
- Suitable for feed and bleed processing with an automated resist stripper controller such as Seacole's Chemical Control System.
- Designed for spray applications but effective in immersion tanks as well.

#### Physical Specifications

Physical State	Liquid
Appearance	Tan-Yellow Solution
Odor	Mild Amine
Stability	Stable
Specific Gravity	1.04
pH	< 12

# Technical Data Sheet

## Equipment Requirements

Tanks: Constructed Of Polypropylene, Polyethylene, PVC Or CPVC.

Heaters: Quartz, Titanium, Stainless Steel, Or Teflon Encased Steel.

Racks: Should Be Polyethylene, Polypropylene, Stainless Steel Or Platisol Coated Steel.

Cooling Coils: Constructed Of Polyethylene, Polypropylene, Stainless Steel Or Platisol Coated Steel.

Ventilation: Recommended

Agitation: Solution Agitation In Immersion Applications Will Significantly Increase The Speed Of Stripping. Spray Processing Will Require The Addition Of Anti-Foam. A Nonpetroleum Based Anti-Foam Such As Seacole's Anti/Foam CR-98S Is Recommended.

Filtration: Continuous Filtration Will Significantly Increase The Life Of The Bath.

## Product Make-Up

RS-50 must be diluted prior to use. The following procedure is recommended.

### *Procedure*

1. Thoroughly rinse the tank and inspect for cleanliness paying special attention to the heaters and heater sheathings, and cooling coils.
2. Fill the tank half full with deionized water. Add RS-50 concentrate such that after final dilution the concentration of RS-50 is 5%-15% by volume. Fill the tank to operating level with deionized water.
3. Turn on heaters and verify temperature with a thermometer.

NOTE: To assure optimum performance, it is recommended deionized or distilled water be used to dilute RS-50.

## Operating Parameters

Before preparing the working bath, make sure the tank is clean and free of all prior resist, dirt, or previous solution deposits. It is recommended an initial concentration of 6% by volume RS-50 (6 gallons of RS-50 for every 94 gallons of water) be employed. The optimum concentration at which to employ RS-50 should be determined by testing. The optimum concentration will be dependent upon, in decreasing order of importance: resist thickness, type of resist, spray pressure, and temperature of the operating bath.

## **IMMERSION APPLICATIONS**

Heat the bath to 125°F to 140°F. Employ mild mechanical solution agitation and immerse the printed circuit boards for 1-4 minutes. Allow the parts to remain immersed for an additional thirty seconds after the resist has been completely removed. After stripping, follow with a clean water rinse in a separate tank and allow the parts to air dry or preferably, use forced warm air drying.

The solution level can be maintained using the post rinse water. In general, RS-50 concentrate should be added at a rate of one liter for every 120 - 170 mil ft<sup>2</sup> of work processed.

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## **SPRAY APPLICATIONS**

### **BATCH**

Heat the bath to 125°F to 140°F. Adjust the conveyor speed so the breakpoint occurs at 40-50% within the spray chamber. As the bath ages the strip speed will diminish. Additions can be made of approximately one liter of RS-50 for every 150 mil square feet of resist stripped. The bath should be dumped when additions of RS-50 will no longer increase the speed.

### **BLEED AND FEED**

RS-50 can also be operated on a feed and bleed addition basis utilizing Seacole's chemical control system. This blends RS-50 concentrate with water automatically, and makes additions based upon panel count. When employing Seacole's chemical control system, adjust the concentration of the output by measuring the concentration of RS-50 utilizing the procedure in the Control and Replenishment section of this technical brochure. The concentration of the output should be 6% by volume RS-50. Once the concentration has been adjusted, program the controller to make additions of diluted RS-50 at a rate of 3 liters for every 15 panels processed. Typically, this will involve opening the solenoid shut-off valve for 10 seconds every 15 panels. It is highly recommended the bath be filtrated in conjunction with feed and bleed additions. Employing a resist filtration device can increase the bath life and reduce the dump frequency by as much as 50%.

### **STRIP TIME**

Strip time will increase with solution use and resist build-up. The temperature of the stripping bath will affect the strip rate exponentially as the temperature is increased. You will also note that a bath in production will product larger resist skin particulate at higher temperatures. Depending upon the strip rate desired and the method for filtering resist skins from the bath, adjust the bath temperature accordingly.

### **Control and Replenishment**

The percent by volume (% v/v) of RS-50 in the working bath or diluted feed line can be calculated using the procedure below.

<b>Equipment Required</b>	<b>Reagents Required</b>
Buret, 50 ml	Bromocresol Green Indicator
Erlenmeyer Flask, 250 ml	Hydrochloric or Sulfuric Acid Standardized .10N
Pipet, 5 ml	

## Technical Data Sheet

### Procedure

1. Pipet 5 ml of sample into a 250 ml Erlenmeyer flask containing approximately 50 ml of deionized water.
2. Add approximately 10 drops of indicator and titrate with standardized acid from a blue-green to a yellow endpoint. Record the mls of titrant required to reach the endpoint.

### Calculation

$$\frac{A \times B \times 8.0}{C} = \% \text{ v/v RS-50 in sample}$$

Where	A	=	volume of titrant required in ml
	B	=	N of the titrant
	C	=	sample volume in ml

Additions of RS-50 concentrate can be made directly on a percent by volume basis to raise the concentration to the desired value.

### Safety and Handling

Read and understand this products MSDS before handling.

### Waste Treatment

Individual users should verify the nature of spent solutions to assure compliance with local, state, and federal regulations. Contact Seacole for specific details and/or further waste treatment recommendations.

### Ordering Information

RS-50 is available in 5 gallon pails, 55 gallon drums, and 275 gallon totes.

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