

## ENVIRO/Bright SC-2

### An Etch Neutralizer/Solder Conditioner Prior to Fusing

#### Product Description

ENVIRO/Bright SC-2 is a concentrated, acidic cleaner used to clean and deoxidize unfused tin-lead surfaces prior to hot oil fusing. ENVIRO/Bright SC-2 is designed to remove metallic oxides, light oils and organic contaminants; while at the same time neutralizing alkaline etch residues. Unlike conventional solder conditioners, ENVIRO/Bright SC-2 can withstand significant copper contamination prior to losing its effectiveness. The product is suitable for either spray or immersion applications, and is ideally suited for feed and bleed applications.

#### Performance Features

- ENVIRO/Bright SC-2 is specifically formulated to remove fingerprints, light oils, alkaline etch residue and metallic oxides from unfused tin-lead surfaces.
- ENVIRO/Bright SC-2 offers a wide process latitude and is ideally suited for feed and bleed operation.
- ENVIRO/Bright SC-2 is a concentrate employed at 10 – 40% by volume, and can be replenished on a feed/bleed basis.
- ENVIRO/Bright SC-2 tolerates copper concentrations exceeding 800 mg/l improving performance and minimizing dump frequency.

#### Physical Specifications

Physical State	Liquid
Appearance	Transparent Blue
Odor	Mild Detergent
pH	< 1
Freeze/Thaw Stability	Stable
Specific Gravity	1.1

#### Equipment Requirements

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

Racks: Constructed of Titanium Or Platisol Coated Steel. Hastalloy C Is Adequate But Not Recommended.

Heaters: Constructed Of Quartz Or Teflon.

Ventilation: Recommended

Filtration: Continuous Filtration Employing 10-Micron Polypropylene Filter Cartridges Is Recommended.

# Technical Data Sheet

## Product Make-Up

ENVIRO/Bright SC-2 MUST BE DILUTED PRIOR TO USE. The operating strength of ENVIRO/Bright SC-2 can be adjusted within the range of 10-40% based upon degree of cleanliness/oxidation of the tin-lead surface. In a typical spray applications, it is recommended ENVIRO/Bright SC-2 be diluted to 10% by volume in deionized water as described below.

NOTE: Increasing either or both the temperature and spray pressure improves performance, typically allowing for lower concentrations of SC-2 to be employed.

1. Make sure the tank is clean and free of residues, paying special attention to heater sheathings and manifold plumbing.
2. Fill the sump with deionized water to approximately 50% of the final desired volume.
3. Add the desired volume of ENVIRO/Bright SC-2 concentration.
4. Dilute to volume with deionized water, mix, and heat to temperature.

## Operating Parameters

The performance of ENVIRO/Bright SC-2 increases with elevated temperature. Optimum operating temperature is 120°F. Below are the recommended operating guidelines for the cleaner.

Temperature	70-120°F
Immersion Time	30 - 120 Seconds
Agitation	Mechanical Or Spray
Ventilation	Recommended
Filtration	Optional

## Control and Replenishment

Under normal operating conditions, the product will perform until the total metal concentration exceeds 5,000 mg/l and/or the copper concentration exceeds 900 mg/L.

If the process is being operated as a feed and bleed, Seacole's chemical dosing device or similar apparatus should be adjusted to make additions of 0.08 gallons (equivalent to Seacole's chemical dosing device operating for 10 seconds at 5 GPM incoming water flow) of working bath for every 30 panels processed.

The concentration of ENVIRO/Bright SC-2, and appropriate additions of ENVIRO/Bright SC-2 concentrate can be determined by following the procedure. The volume of the sump should be maintained with additions of deionized water.

## Technical Data Sheet

### Determination Of % By Volume ENVIRO/Bright SC-2

Equipment Required	Reagents Required
Buret, 50 ml	Bromcresol Purple Indicator
Erlenmeyer Flask, 250 ml	Sodium Hydroxide Standardized 0.10 N
Pipet, 5 ml	

#### Procedure

1. Pipet a 10 ml sample of the bath into a 250 ml Erlenmeyer flask containing 50 ml of deionized water.
2. Add approximately 10 drops of bromcresol purple indicator and titrate with standardized sodium hydroxide from yellow to the first stable purple endpoint. Record the number of ml of titrant required.

#### Calculations

$$\frac{A \times B \times 86.9}{C} = \% \text{ by volume ENVIRO/Bright SC-2}$$

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

#### Additions

$$\frac{(A - B) \times C}{30.3} = \text{Volume of ENVIRO/Bright SC-2 to add}$$

Where      A      =      desired % by volume  
              B      =      actual % by volume  
              C      =      volume of bath

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## Determination Of Copper Concentration

Equipment Required	Reagents Required
Buret, 50 ml	Ammonium Hydroxide/Ammonium Chloride
Erlenmeyer Flask, 250 ml	Buffer Solution
Pipet, 100 ml	EDTA Standardized 0.10 M
	PAN Indicator

### Procedure

1. Pipet a 100 ml sample of the bath into a 250 ml Erlenmeyer flask containing 50 ml of ammonium hydroxide/ammonium chloride buffer.
2. Add 4-5 drops of PAN indicator and titrate with standardized EDTA from blue to the first stable light green endpoint. Record the number of ml of titrant required.

### Calculations

$$\frac{A \times B \times C \times 1,000}{D} = \text{mg/L copper}$$

Where	A	=	ml of titrant required
	B	=	M of titrant (0.1)
	C	=	M.W. of copper (63.54)
	D	=	sample volume in ml (100)

The bath should be dumped when the copper concentration reaches 900 mg/L.

### 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

ENVIRO/Bright SC-2 is available in 5-gallon pails and 55-gallon drums.

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