

# ST-33

## Positive resist stripper

ST-33 positive resist stripper is formulated from organic solvents to be effective in the removal of positive photoresists from corrosion-sensitive substrates. It has a unique chemistry that eliminates corrosive etching of GaAs and other III-V metals and copper. In addition, ST-33 is self-buffering, and prevents high pH conditions when wafers are transferred into DI water. Thus, ST-33 eliminates poststrip corrosion of metals and metal alloys.

ST-33 may also be utilized to neutralize corrosive chemicals generated during metal etch processes. Consult your Entegris sales representative or engineering department for recommended processing.

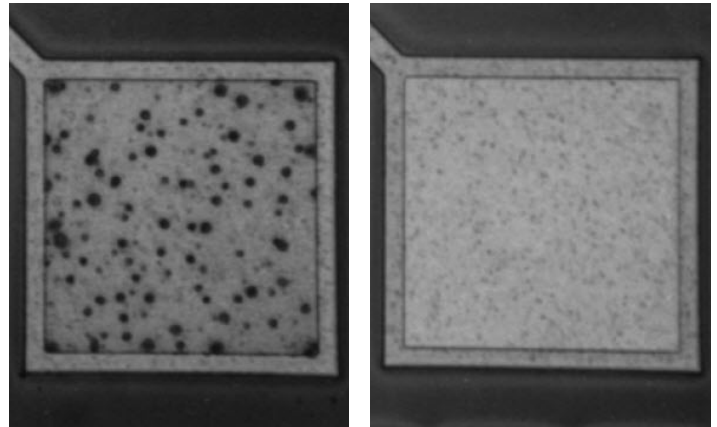
ST-33 positive resist stripper is completely water miscible; contains no phenols, chlorinated hydro-carbons, or other toxic materials; and is formulated for ease of disposal.

### BENEFITS

- Contains no phenols or chlorinated hydrocarbons
- Strips hard-to-remove positive photoresist
- Compatible with copper metallization and many low- $\kappa$  films
- Non-corrosive to metals and gallium arsenide
- Effective for post-metal etch corrosion prevention
- Low in metal ions
- Water soluble

### BATH MAKE-UP

ST-33 is formulated as a ready-to-use solution. A two-bath system is recommended: the first to remove the bulk of the photoresist, and the second to remove any remaining traces.



SEM of an aluminum/0.5% copper bond pad, stripped using a conventional positive resist stripper. SEM shows excessive pitting.

SEM of an identical pad, stripped in ST-33 positive resist stripper with no visual pitting.

### PROCESS FOR RESIST STRIPPING

In processing, always load DRY substrates into ST-33.

#### Set-up for a One Bath System

1. Heat one bath of ST-33 to 80° – 95°C (176° – 203°F).
2. Immerse dry substrates into the ST-33 for 10 – 15 minutes.
3. Transfer substrates to DI water rinser for 15 minutes.
4. Spin dry.

#### Set-up for a Two Bath System

1. Heat two baths of ST-33 to 80° – 95°C (176° – 203°F).
2. Immerse dry substrates into the first bath for 5 – 10 minutes.
3. Transfer substrates to the second bath of ST-33 for 5 – 10 minutes.
4. Transfer substrates to DI water rinser for 15 minutes.
5. Spin dry.

## Use in Automatic Strip Equipment

ST-33 positive resist stripper is especially effective in automatic strip equipment. It is formulated to prevent high pH effects typically seen with amine-containing strippers in automatic equipment. This effect causes metal pitting in sensitive metal alloys such as AlCu and AlSi.

ST-33 can be used in automatic strip equipment. For process details appropriate to the equipment used in your facility, contact Entegris' Applications Engineering staff.

## BATH LIFE

The total number of substrates processed per bath of ST-33 will vary depending upon the resist thickness, thermal history, pre-treatment (deep UV, ion implant, etc.), and bath temperature. Users should contact Entegris technical personnel for details appropriate to their processing.

## QUALITY CONTROL

ST-33 positive resist stripper is manufactured utilizing strict quality controls to maintain Entegris' high standards and to ensure batch-to-batch consistency.

## STORAGE AND HANDLING

The shelf life of ST-33 positive resist stripper is one year from date of manufacture if stored in its original, unopened container at 10° – 32°C (50° – 90°F), out of direct sunlight. Users should refer to Entegris' material safety data sheet on ST-33 for additional precautions on storage and handling.

## EQUIPMENT COMPATIBILITY

**CAUTION:** ST-33 will attack many plastic materials used in piping and other process equipment. The chart below should serve as a guide for selecting materials compatible with its use. For information on materials not listed, contact Entegris' technical staff.

### Incompatible materials

BUNA-N rubber	Neoprene	Polyacrylate
PVDC	Hypalon®	CPVC
PVC	Tygon® (some types)	Acrylics
Viton®-A	Polyurethane	

### Compatible materials

Teflon® (PTFE)	Pyrex®	Quartz	PVDF
316 Stainless steel	Kalrez®	PFA	

## DISPOSAL

All waste materials must be disposed of in accordance with local, state, and federal regulations. Refer to Entegris' material safety data sheet for additional data.

## FOR MORE INFORMATION

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit [entegris.com](http://entegris.com) and select the Contact Us link to find the customer service center nearest you.

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