



ST-33

Positive resist stripper

Overview

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.

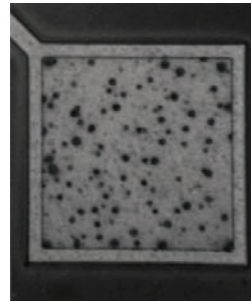
ST-33 positive resist stripper is completely water miscible; contains no phenols, chlorinated hydrocarbons, or other toxic materials; and is formulated for ease of disposal.

Benefits

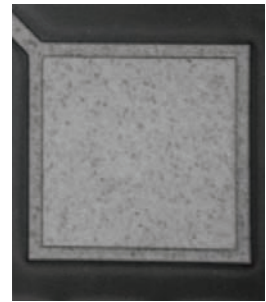
- Contains no phenols or chlorinated hydrocarbons
- Strips hard-to-remove positive photoresist
- Compatible with copper metallization and many low-k films
- Non-corrosive to metals and gallium arsenide
- Effective for post-metal etch corrosion prevention
- Low in metal ions
- Water soluble

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°C–95°C (176°F–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°C–95°C (176°F–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°C–32°C (50°F–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® | 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 www.entegris.com and select the Customer Service link for the center nearest you.

Terms and Conditions of Sale

All purchases are subject to Entegris' Terms and Conditions of Sale. To view and print this information, visit www.entegris.com and select the Legal Notices link from the footer.

Entegris®, the Entegris Rings Design® and Creating a Material Advantage® are registered trademarks of Entegris, Inc. Kalrez®, Teflon®, Hypalon® and Viton® are registered trademarks of E. I. du Pont de Nemours and Company. Pyrex® is a trademark of Corning Incorporated. Tygon® is a trademark of Norton Company.

ENTEGRIS, INC.

Corporate Headquarters | 129 Concord Road | Billerica, MA 01821 USA
Customer Service Tel. +1 952 556 4181 | Customer Service Fax +1 952 556 8022
In North America 800 394 4083 | www.entegris.com