ST-22

Positive resist stripper

ST-22 positive resist stripper is a positive photoresist stripper specifically formulated from organic solvent blends to be effective in removing hard-to-strip positive photoresists.

ST-22 is completely water soluble; contains no phenols, chlorinated hydrocarbons, or other toxic materials. In addition, ST-22 is formulated for ease of disposal.

ST-22 positive resist stripper is especially effective in stripping the following hard-to-remove positive photoresists:

- Plasma hardened
- High temperature cured
- Hard baked (up to 180°C [356°F])
- Deep UV-treated
- Ion implanted

BENEFITS

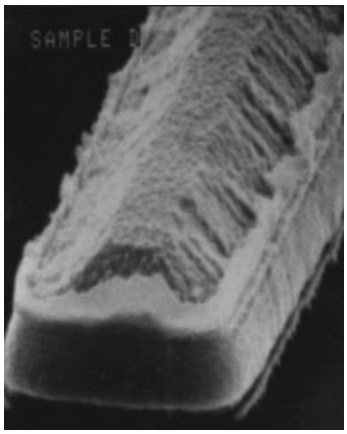
- Contains no phenols or chlorinated hydrocarbons
- Strips hard-to-remove positive photoresist
- Non-corrosive to metals
- Low in metal ions
- Water soluble
- Low in particles

BATH MAKE-UP

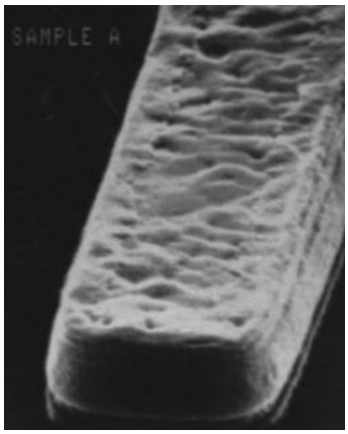
ST-22 is formulated as a ready-to-use solution. A two-bath system is recommended: the first to remove the bulk of the photoresist, and the second to remove any remaining traces.

PROCESS

In processing, always load dry wafers into ST-22. Moisture may decrease the effectiveness of ST-22 and cause metal corrosion.



SEM of a 1.5 micron Ti/W/2% Copper/Ti/W metal lead that has been reactive ion etched with sidewall polymers remaining.



SEM of the same metal lead after photoresist stripping in ACSI's ST-22 positive resist stripper.

Set-up for a One Bath System

1. Heat ST-22 to the recommended temperature from the temperature chart on the reverse side of this sheet.
2. Immerse dry wafers into the ST-22 for 10 – 15 minutes.
3. Transfer wafers to DI water rinser for 15 minutes.

   NOTE: A 1 – 2 minute dip in one of Entegris' post stripper rinse solutions or isopropyl alcohol prior to DI water rinse may enhance cleaning and inhibit attack of sensitive metal alloys.

4. Spin dry the wafers.

Set-up for a Two Bath System

1. Heat two baths of ST-22 to the recommended temperature from the temperature chart on the reverse side of this sheet.
2. Immerse dry wafers into the first bath for 5 – 10 minutes.
3. Transfer wafers to the second bath of ST-22 for 5 – 10 minutes.
4. Transfer wafers to DI water rinser for 15 minutes.

   NOTE: A 1 – 2 minute dip in one of Entegris' post stripper rinse solutions or isopropyl alcohol prior to DI water rinse may enhance cleaning and inhibit attack of sensitive metal alloys.

5. Spin dry the wafers.

ST-22 process times and temperature may vary depending upon the photoresist processing history. The processes on this datasheet outline typical parameters to remove positive photoresist. Entegris personnel are always available for consultation on removal of your positive photoresist if processed atypically.

ST-22 is also effective in automatic strip equipment. In these systems, ST-22 should not be heated greater than the manufacturer's maximum recommendation.

Temperature chart

Resist bake temperature	St-22 bath temperature
Up to 135°C (275°F)	Ambient to 100°C (212°F)
135° – 150°C (275° – 302°F)	90° – 100°C (194° – 212°F)
150° – 180°C (302° –356°F)	105° – 115°C (221° – 239°F)
Above 180°C (356°F)	110° – 125°C (230° – 257°F)

For removal of plasma-etched deposited polymers, ST-22 should be used at 115°C (239°F) – 125°C (257°F).

BATH LIFE

The total number of wafers processed per bath of ST-22 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-22 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-22 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.

EQUIPMENT COMPATIBILITY

CAUTION: ST-22 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)	316 Stainless steel	Quartz
Pyrex®	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** and select the Contact Us link to find the customer service center nearest you.

TERMS AND CONDITIONS OF SALE

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