

TechniStrip® NI555

Photoresist Stripper



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Unique Acidic Solvent Blend for Full Dissolution of Chemically Amplified Resins

Historically, thick film photoresist products used for advanced packaging have been on novolak/diazonaphthoquinone (DNQ) platforms. While these coatings are widely used at a relatively low cost, novolak/DNQ photoresists have met their limitations with newer, more demanding advanced packaging technologies. These limitations have led to the growing use of chemically amplified (CA) photoresist chemistries, which can provide thicker single coat films, higher aspect ratios, and faster throughput.

Although CA photoresists have overall better attributes compared to novolak/DNQ photoresists, the removal and dissolution of these products can be challenging. Inadequate removal of CA photoresists can negate their photolithography benefits.

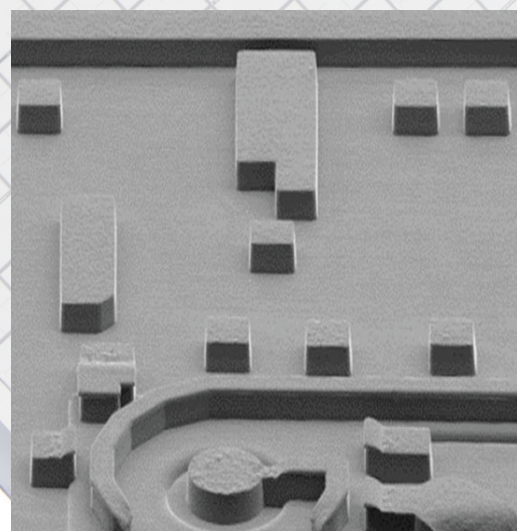
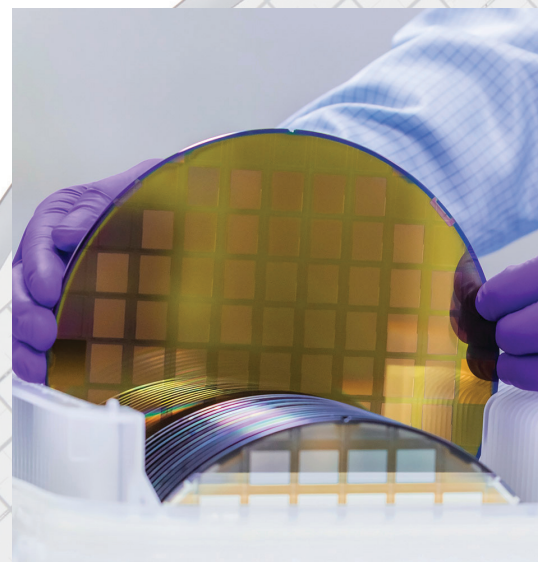
To overcome these challenges, Technic has had to look beyond traditional solvents like TMAH, DMSO, and NMP. In partnership with photoresist suppliers, Technic has formulated TechniStrip® NI555, a unique acidic solvent blend solution that thoroughly removes chemically amplified resists by providing complete dissolution of these highly crosslinked photoresists.

Features

- Full dissolution of chemically amplified photoresist like AZ15nXT and AZnLOF2010
- Dissolution of select positive tone resins
- Extremely high metal compatibility
- High loading/long bath life
- Suitable for batch (spray and immersion) or single wafer systems
- Direct water rinse
- Low toxicity: TMAH, NMP, and hydroxylamine free
- Non-alkaline chemistry

Benefits

- Reduced defects when using chemically amplified photoresist by providing full dissolution
- Lower cost of operation achieved by higher throughput and higher loading capacity
- Improved process control and performance by the chemistry's high metal compatibility
- A non-alkaline and low toxicity formulation provides enhanced safety for operators



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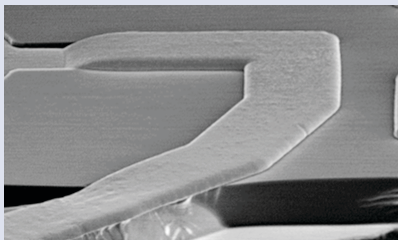
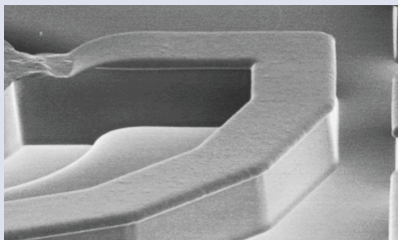


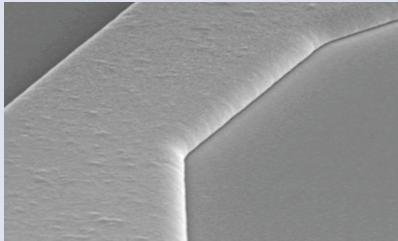
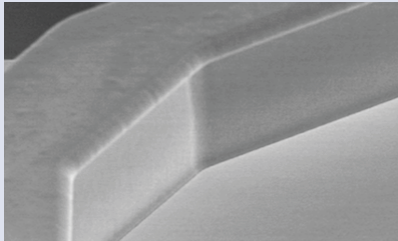
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High Substrate Compatibility

Etch Rate Å/min	Ti	TiN	Al	Cu (ECD)	Ta	Ni	SiO ₂ (TEOS)	LPCVD Si ₃ N ₄	Si
60°C	< 2	< 1	< 5	< 5	< 1	< 10	< 1	< 1	< 1
80°C	< 5	< 1	< 10	< 5	< 1	< 10	< 1	< 1	< 1

Before Stripping After Stripping

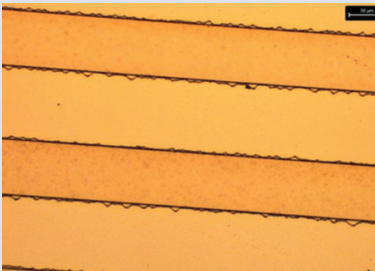
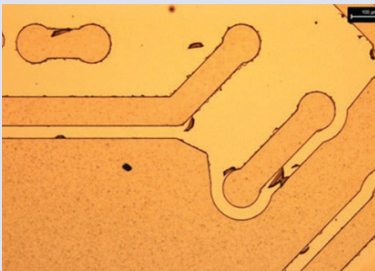





SEM of AZ 15nXT
(10 microns)

Showing full dissolution
in TechniStrip NI555
@60°C for 6 mins

TMAH/DMSO based stripper

TechniStrip® NI555

Removal comparison
of chemically amplified
photoresist using a
TMAH/DMSO based stripper
and TechniStrip® NI555





SEM images showing
incomplete removal
with TMAH/NMP based
stripper and full dissolution
using TechniStrip® NI555