Selective Silicon Nitride Etch is critical to logic manufacturing in Trench Isolation and Spacer Thinning process steps. Silicon level determines both selectivity and etch rate while enabling using reclaim mode for a significant reduction in operation cost and waste.

With the advent of NAND and DRAM devices, Silicon Nitride Etch has become a core process in memory manufacturing. Selective etching of Silicon Nitride out of many alternating layers requires highly precise online process control. Excessive Silicon in the chemistry can cause particle redeposition effect while Silicon deficiency compromises selectivity.

QUALISURF has become the Process of Record for leading manufacturers. The QSF-500 series is designed to accurately measure ppm levels of Silicon. This online system provides fast results and interfaces seamlessly with Nitride Wet Etch tools.

On-line Monitoring of Silicon in Hot Phosphoric Solutions

QualiSurf® QSF-500 Series
Control Etch Rate and Selectivity

QualiSurf QSF-500 Series
Wet Process Monitoring System

ECI TECHNOLOGY
We Keep the Chemistry Right™
Features

- Fast, Continuous, and Reliable results
- Supports all leading process tools
- Supreme accuracy and repeatability
- Temperature controlled analysis
- Automatic Reagent Generator (ARG)
- Automatic validation of results
- Closed-loop control option
- Minimal footprint
- S2-S8, CE compliant
- Communication 4-20mA, RS-232, TCP/IP
- Ultra-low CoO

Typical Applications*

- Phosphoric Acid: 40-90 wt.%
- Temperature: Up to 200°C
- Silicon: Up to 1300 ppm
- Analysis time: 4 minutes
- Si Accuracy: 1.5 ppm
- Si Repeatability: 0.5 ppm
- H₃PO₄ Accuracy: 0.3 wt.%
- H₃PO₄ Repeatability: 0.05 wt.%

*chemistry dependent

Backed by ECI Global and Local Support

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