

FeCl₂
H₂SO₄
HCL
NaOH
FeSO₄
Slurries
▶ **Etching**
TMAH
Slurries

Application Notes



References

Our specialized distributor Titech from Taiwan supports the following final customers in the use of Rhosonics analysers:
Acer, Cando Opto-electronics, CHI-MEI Opto-electronics, Dainippon Screen, Japan. (machine builder, Japan), GPTC (machine builder), Intech Taiwan (PCB machine builder), Marketech (machine builder, Taiwan)
National Semiconductor, USA, Piotec Taiwan (PCB machine builder), Ritek Display, Toppoly display, TSMC, Taiwan

Examples

By removing copper from the plate with sulphuric acid, copper sulphate is formed while the acid concentration is decreased. The copper sulphate is removed from the matrix and the acid is blended until the acid concentration is equal to the setpoint.

The analysis is done by means of inline high resolution ultrasonic analyzers in combination with an inline non-contacting electrical conductivity probe.

The result is a maintenance free inline real time analyzer.

Etching of metals is used in electronics industry, like TFT, LCD and semiconductor production. After the photolithography process, the coating on the plate is etched with dry gas, forming a plasma due to a RF field, and removing specific portions on the plate. Then the Wet Etching process starts, removing other portions of the object material. When the acid reacts with the materials on the plate the open region of material is dissolved in the acid and thus decreasing the acid concentration.

The etch process is the fastest process step of the production process. Therefore a very fast and accurate analyser is needed to control the acid concentration and analyzing the dissolved metal concentration.



The Etching Analyzer of the Future

Benefits

For this application our hybrid ultrasonic technology can be used for the determination of both acids and metal salts, in most cases extended by our inductive conductivity sensor. The benefits of using this technology are:

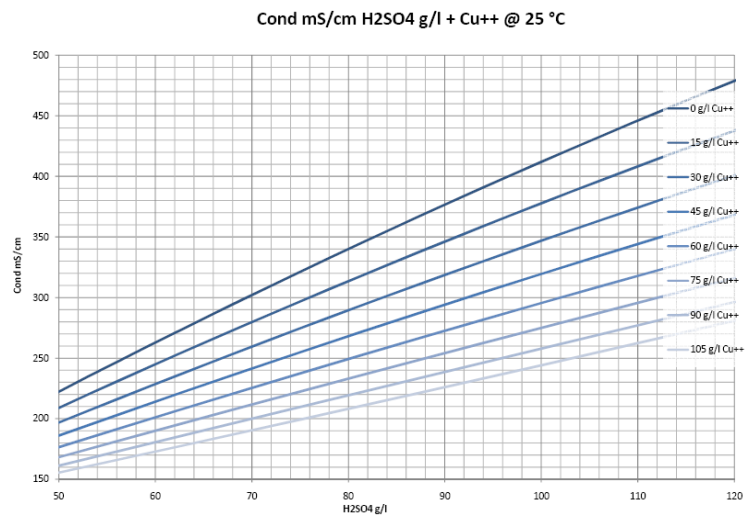
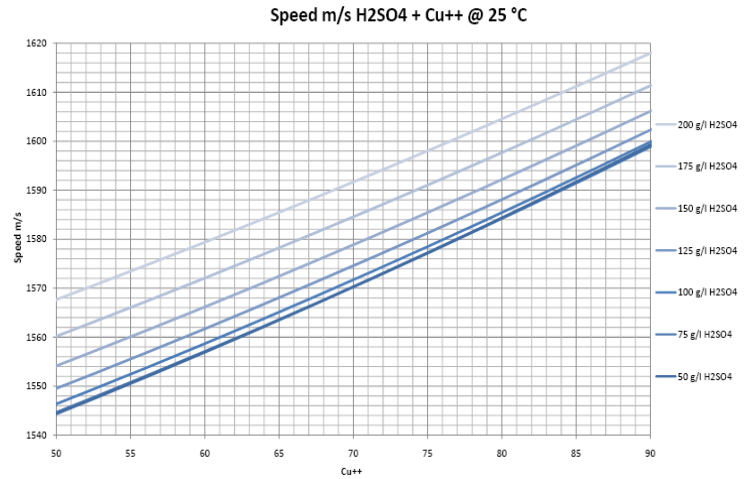
- Very low price and cost of ownership
- High accuracy and reproducibility
- Maintenance free
- No cleaning needed
- No moving parts
- No reagents

Depending on the concentrations and mounting possibilities, the analyser will be selected from the 9500 series. The sensor can be of the UMP, UFTC or UFTW type. This combination will offer the following features:

- Insitu, spool and wafer sensor technology
- High-end software technology, easy to operate
- Colour graphics touch screen display
- Datalogging
- Various communication protocols, like Modbus

Examples

Method	Ultrasonic sound velocity Ultrasonics Attenuation Electrical Conductivity
Typical calibrations	Cu++ and H2SO4



Model selection

Controller:
Model 9570 Ternary analyser aqueous solutions
Model 9580 Ternary analyser slurries

Sensor:
UMP50 in flow cell or UFTC/UFTW
PEEK Conductivity sensor

Options:
Cables, connectors and enclosures
System integration with pumps, degassing, cooling



Continuous in-line monitoring & Process control



The Solution Specialist

The mission of Rhosonics Analytical is to provide solutions for In-line concentration analysis of virtually all existing process liquids, including electrolytes, emulsions, suspensions and slurries.

For almost two decades, Rhosonics Analytical has been focusing on the development and employment of high-performance ultrasonic technologies for in-line liquid concentration analyzers and non-destructive testing of materials.

Our products

- In-line concentration analyzers for virtually all existing process liquids, including solutions, electrolytes, emulsions, suspensions, solids and slurries.
- Piezo composite transducers for Ultrasonic NDT (Non-Destructive Testing) for new inspection methods, including ToFD and Phased Array.

The Solution Specialist

Rhosonics Analytical is The Solution Specialist for the design, production and supply of ultrasonic in-line process analyzers for liquids and slurries in any industry world wide.



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