

Cyclic Voltammetric Stripping

Cyclic Voltammetric Stripping (CVS) is the method of choice for the easy and accurate analysis of organic additives.

Cyclic Voltammetric Stripping (CVS) and Cyclic Pulse Voltammetric Stripping (CPVS) are techniques widely used in plating industry for the determination of organic additives in plating solutions. The method is an indispensable part of production control of many technical coating processes, especially in the production of printed circuit boards. The quantitative determination of the additives is done indirectly using their influence on the deposition of the main component of the plating solution. A simple, robust and favorably-priced rotating disk electrode made of platinum is used for the analysis.

The CVS determination of organic additives can be carried out manually, partly automated or fully automated using the 838 Advanced Sample Processor. Series of up to 56 samples can be analyzed automatically

Main applications for CVS

- Acid copper baths
- Tin-lead baths
- Tin baths

Special calibration techniques are required for the quantification of the different types of additives. Brighteners are determined by means of Linear Approximation Technique (LAT) or Modified Linear Approximation Technique (MLAT). For the suppressors Dilution Titration (DT) is used whereas levelers are usually determined using Response Curve (RC) technique.

Superior accuracy of analytical results

The concentration of the additives can be determined exactly with CVS or CPVS. The effective concentration of the particular additive in the bath sample is displayed and printed directly in mL additive per L bath solution.. CVS and CPVS have become standard methods in the plating industry mainly because of the accuracy of the analytical results. Other methods, i.e. the classic Hull Cell method, do not allow the determination of concentrations but only to assess the quality of the deposited metal layer.

Ready-to-use methods included

A preinstalled method is loaded to run the determination. The analysis can be started after adaption of a few parameters. Ready-to-use methods for the most important types of baths of leading bath suppliers worked out in our application laboratory are already shipped with the instrument. Additional applications with the respective methods are made available on the Metrohm website as Application Bulletins and Application Notes.

