

VA Application Note No. V - 156

Title: Brightener «Thru-Cup EVF-1A» in acid copper baths (Uyemura)

Summary: Determination of brightener «Thru-Cup EVF-1A» in acid copper baths by modified linear approximation technique (MLAT) using cyclic voltammetric stripping (CVS).

Sample: Acid copper electroplating bath
Sample preparation: None

Analysis of brightener «Thru-Cup EVF-1A»

Electrolyte Virgin make-up solution (VMS)
 CuSO₄, H₂SO₄ and NaCl concentrations according to the supplier specifications.

Measuring solution **Intercept solution**
 45 mL VMS
 + 0.5 mL suppressor «Thru-Cup EVF-B»

Sample
 5 mL acid copper plating bath

Standard addition solution
 Brightener «Thru-Cup EVF-1A» diluted 1:5 with VMS

Working electrode (WE) **Pt-RDE:**
 Drive shaft6.1246.000
 + Pt tip for CVS6.1204.160

Auxiliary electrode (AE) Pt.....6.0343.000

Reference electrode (RE) Reference system: Ag/AgCl/KCl (3 mol/L)6.0728.020
 Intermediate electrolyte: KNO₃ sat.:H₂O (3:1) ..6.1245.010

Parameters	
Working electrode	RDE (hydrodynamic measurement)
Stirrer speed	2000 rpm
Mode	CVS
Calibration technique	MLAT
Start potential	1.575 V
First vertex potential	-0.25 V
Second vertex potential	1.575 V
Voltage step	0.006 V
Sweep rate	0.1 V/s
Peak potential (Cu)	0.25 V ± 0.2 V

Determination of brightener «Thru-Cup EVF-1A»

