

VA Application Note No. V - 183

Title: Brightener «Top Lucina α -2» in acid copper baths (Okuno Chemical Industries)

Summary: Determination of brightener «Top Lucina α -2» 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 «Top Lucina α -2»

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

Measuring solution **Intercept solution**
42.812 mL VMS
+ 0.075 mL leveler « Top Lucina α -3»
+ 0.113 mL suppressor « Top Lucina α -M»

Sample
25 mL acid copper plating bath

Working electrode (WE) **Pt-RDE:**
Drive shaft 6.1246.000
+ Pt tip for CVS 6.1204.160

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	1.625 V	
First vertex potential	-0.175 V	
Second vertex potential	1.625 V	
Voltage step	0.006 V	
Sweep rate	0.1 V/s	
Peak potential (Cu)	0.2 V \pm 0.2	

Determination of «Top Lucina α -2»

