

VA Application Note No. V - 134

Title: Brightener «Copper Gleam™ 2001 Additive» in acid copper baths (Rohm and Haas Electronic Materials)

Summary: Determination of brightener «Copper Gleam™ 2001 Additive» 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 «Copper Gleam™ 2001 Additive»																					
Electrolyte	Virgin make-up solution (VMS) CuSO ₄ , H ₂ SO ₄ and NaCl concentrations according to the supplier specifications.																				
Measuring solution	Intercept solution 30 mL VMS + 1.2 mL suppressor «Copper Gleam™ 2001 Carrier»																				
	Sample 10 mL acid copper plating bath + 0.2 mL suppressor «Copper Gleam™ 2001 Carrier»																				
Working electrode (WE)	Pt-RDE: Drive shaft6.1246.000 + Pt tip for CVS6.1204.160																				
Auxiliary electrode (AE)	Pt6.0343.000																				
Reference electrode (RE)	Reference system: Ag/AgCl/KCl (3 mol/L)6.0728.020 Intermediate electrolyte: KNO ₃ sat.:H ₂ O (3:1) ..6.1245.010																				
Parameters	<table border="1"> <tbody> <tr> <td>Working electrode</td> <td>RDE (hydrodynamic measurement)</td> </tr> <tr> <td>Stirrer speed</td> <td>2000 rpm</td> </tr> <tr> <td>Mode</td> <td>CVS</td> </tr> <tr> <td>Calibration technique</td> <td>MLAT</td> </tr> <tr> <td>Start potential</td> <td>1.575 V</td> </tr> <tr> <td>First vertex potential</td> <td>-0.3 V</td> </tr> <tr> <td>Second vertex potential</td> <td>1.575 V</td> </tr> <tr> <td>Voltage step</td> <td>0.006 V</td> </tr> <tr> <td>Sweep rate</td> <td>0.15 V/s</td> </tr> <tr> <td>Peak potential (Cu)</td> <td>0.2 V ± 0.2 V</td> </tr> </tbody> </table>	Working electrode	RDE (hydrodynamic measurement)	Stirrer speed	2000 rpm	Mode	CVS	Calibration technique	MLAT	Start potential	1.575 V	First vertex potential	-0.3 V	Second vertex potential	1.575 V	Voltage step	0.006 V	Sweep rate	0.15 V/s	Peak potential (Cu)	0.2 V ± 0.2 V
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Determination of «Copper Gleam™ 2001 Additive»

