

VA Application Note No. V - 136

Title: Brightener «Cupracid BL» in acid copper baths (Atotech)

Summary: Determination of brightener «Cupracid BL» in acid copper baths by linear approximation technique (LAT) using cyclic voltammetric stripping (CVS).

Sample: Acid copper electroplating bath
Sample preparation: None

Analysis of brightener «Cupracid BL»																					
Electrolyte	Virgin make-up solution (VMS) CuSO ₄ , H ₂ SO ₄ and NaCl concentrations according to the supplier specifications.																				
Measuring solution	Intercept solution 24.5 mL VMS + 0.5 mL suppressor «Cupracid BL-CT»																				
	Sample 75 mL acid copper plating bath																				
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"> <thead> <tr> <th>Working electrode</th> <th>RDE (hydrodynamic measurement)</th> </tr> </thead> <tbody> <tr> <td>Stirrer speed</td> <td>2000 rpm</td> </tr> <tr> <td>Mode</td> <td>CVS</td> </tr> <tr> <td>Calibration technique</td> <td>LAT</td> </tr> <tr> <td>Start potential</td> <td>1.575 V</td> </tr> <tr> <td>First vertex potential</td> <td>-0.25 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>0.1 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	LAT	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)	0.2 V ± 0.2 V
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Determination of brightener «Cupracid BL»

