

VA Application Note No. V - 141

Title: Suppressor «MACuSpec™ PPR 100 Wetter» in acid copper baths (MacDermid)

Summary: Determination of suppressor «MACuSpec™ PPR 100 Wetter» in acid copper baths by dilution titration (DT) using cyclic voltammetric stripping (CVS).

Sample: Acid copper electroplating bath
Sample preparation: Dilution 1:10 with VMS

Analysis of suppressor «MACuSpec™ PPR 100 Wetter»																							
Electrolyte	Virgin make-up solution (VMS) CuSO ₄ , H ₂ SO ₄ and HCl concentrations according to the supplier specifications.																						
Measuring solution	80 mL VMS																						
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: H ₂ SO ₄ (1 mol/L).....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>DT</td> </tr> <tr> <td>Start potential</td> <td>1.575 V</td> </tr> <tr> <td>First vertex potential</td> <td>-0.175</td> </tr> <tr> <td>Second vertex potential</td> <td>1.575</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>0.25 V ± 0.25 V</td> </tr> <tr> <td>Evaluation ratio (Q/Q(0))</td> <td>0.5</td> </tr> </tbody> </table>	Working electrode	RDE (hydrodynamic measurement)	Stirrer speed	2000 rpm	Mode	CVS	Calibration technique	DT	Start potential	1.575 V	First vertex potential	-0.175	Second vertex potential	1.575	Voltage step	0.006 V	Sweep rate	0.1 V/s	Peak potential (Cu)	0.25 V ± 0.25 V	Evaluation ratio (Q/Q(0))	0.5
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