

VA Application Note No. V - 157

Title:	Leveler «Thru-Cup EVF-R» in acid copper baths (Uyemura)
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Summary:	Determination of leveler «Thru-Cup EVF-R» in acid copper baths by response curve technique (RC) using cyclic voltammetric stripping (CVS).
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Sample:	Acid copper electroplating bath
Sample preparation:	None

Analysis of leveler «Thru-Cup EVF-R»																					
Electrolyte	Virgin make-up solution (VMS) CuSO ₄ , H ₂ SO ₄ and NaCl concentrations according to the supplier specifications.																				
Measuring solution	Electrolyte solution 20 mL VMS + 0.4 mL brightener «Thru-Cup EVF-1A» + 0.4 mL suppressor «Thru-Cup EVF-B»																				
	Sample 20 mL acid copper plating bath																				
Working electrode (WE)	Pt-RDE: Drive shaft6.1204.210 + Pt tip for CVS6.1204.190																				
Auxiliary electrode (AE)	Pt6.0343.000																				
Reference electrode (RE)	Reference system: Ag/AgCl/KCl (3 mol/L)6.0728.030 Intermediate electrolyte: KNO ₃ sat.:H ₂ O (3:1) ..6.1245.010																				
Parameters	<table border="1"> <tr> <td>Working electrode</td> <td>RDE (hydrodynamic measurement)</td> </tr> <tr> <td>Stirrer speed</td> <td>2600 rpm</td> </tr> <tr> <td>Mode</td> <td>CVS</td> </tr> <tr> <td>Calibration technique</td> <td>RC</td> </tr> <tr> <td>Start potential</td> <td>1.625 V</td> </tr> <tr> <td>First vertex potential</td> <td>-0.175 V</td> </tr> <tr> <td>Second vertex potential</td> <td>1.625 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 ± 0.3 V</td> </tr> </table>	Working electrode	RDE (hydrodynamic measurement)	Stirrer speed	2600 rpm	Mode	CVS	Calibration technique	RC	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 ± 0.3 V
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