QualiLab Plating Bath Analyzer

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Operations Manual

\*This is done to qualify the plating solution. Do this once a week or before expecting a product lot.

\*Before starting look to see if the Electrode solutions are to their correct levels.

Starting Procedure:

1. Power on tool.
   1. This will also turn on the computer.
2. Open QualiLab 6.3.1 software.
   1. On Desktop
3. Login
   1. Engineer
   2. PW:2
4. If need be change to the correct project.
   1. Lefty (Left ClassOne Plater) uses BASF CULPUR Alpha.
   2. Righty (Right ClassOne Plater) uses the one above.
5. Select Multimode tab.
6. Select the Additive you would like to measure.
   1. Accelerator
   2. Suppressor
   3. Leveler
7. Set the Tank Parameters

Ex:

Accelerator:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Step | Tank | Component | Sample ID | Sample Tray | Dilution | Add. Inc |
| 1 | Target | Accelerator | - | 8 | 8% | 0.2 |
| 2 | Bath | Accelerator | - | 9 | 8% | 0.2 |

Suppressor:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Step | Tank | Component | Sample ID | Sample Tray | Dilution | Add. Inc |
| 1 | Target | Suppressor | - | 8 | 8% | 0.15 |
| 2 | Bath | Suppressor | - | 9 | 8% | 0.15 |

Leveler:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Step | Tank | Component | Sample ID | Sample Tray | Dilution | Add. Inc |
| 1 | Target | Leveler | - | 8 | 8% | 0.4 |
| 2 | Bath | Leveler | - | 9 | 8% | 0.4 |

Target = QualiLab Standard Solution (Control)

Bath = Sample taken from the tool

8. Set Turn Table Parameters

1. Be sure to set the Final step Cleaning to be the same slot as the cleaning Water.

9. Open Loading Instructions and follow the instructions it gives as to what solutions to put where for the test you are running.

a. You may need to make the solutions.

b. Support Electrolytes:

b. Additives:

|  |  |  |
| --- | --- | --- |
| Additive | BASF Chemistry | Volume |
| Accelerator | CUPURA Alpha 2002EL | 11ml/L |
| Suppressor | CUPURA Alpha 3060EL | 5ml/L |
| Leveler | CUPURA Alpha 4000 | 6ml/L |

10. Start Analysis

11. To get results: Project/Report/Results

Calculating Additions

Ex: Acc to Add → [IDEAL / Astd = x, µ ≈ x] → [ x ∙ ABath = y] → [IDEAL – y = Δ] → [ΔAcc ∙ Bath Volume] = Z

Z = ml to Add

* Measure and pour additives directly into the Chamber Bowl. Let run for 15 minutes.

Electrode Preparation

1. There is an inner solution and an outer solution of the electrode.
   1. Inner Solution: 0.1M KCl + 10% V H2SO4 (Sulfuric Acid)
   2. Outer Solution: 10% Sulfuric Acid Solution
2. The solutions need to be regularly replace/refreshed. (Assumed regular operation frequency)
   1. Outer Solution = Once a week.
   2. Inner Solution = Once every two weeks.
3. To replenish the Outer Solution, you will simply drain the solution from the electrode.
   1. This can be done by pushing up on the bottom of the electrode.
   2. The solution will leak out form the bottom.
   3. Using a pipette, inject more of the appropriate solution into the opening on the electrode.
   4. Fill to the opening.
   5. Do this twice.
4. To replenish the Inner Solution, you will simply fill the solution level to the opening.
   1. Drain the outer solution.
   2. Unscrew the white sleeve fastener at the top of the electrode.
      1. Be mindful of the spring.
   3. Slide inter chamber out of the outer sleeve.
   4. Using a pipette with a fine tip fill the inner chamber up to the opening.
      1. Slide the white plastic sleeve back around the opening when once done.
   5. Reassemble electrode.
      1. When screwing the sleeve fastener back onto the top of the electrode, tighten it until it does not tighten any more.
      2. Now loosen the sleeve fastener two full turns.
         1. This allows for the solutions to be able to leak out from the bottom during analysis.

