

Using Multiparameter Meter at a Electroplating Plant

The most important parameters of the electrolytes used for electroplating ('plating bath' in technical parlance) include the pH. Depending on the nature of the plating method, the electrolytes can be acidic, basic or neutral. In case of this company, the pH value can vary between 1 and 13 pH, depending on the technology.

The pH of the electrolytes is measured with the HI 1131B probe. Another important parameter is the EC. They flush the materials with demineralized water after the plating bath. They continuously measure the EC of this water and keep flushing until the EC value will be lower than 20 $\mu\text{S}/\text{cm}$.

They also check the quality of the demineralized water. It should be under 5 $\mu\text{S}/\text{cm}$. The HI 76312 probe is used to determine the conductivity. In theory, the electrolytes – independently of the separated metallic ions – include similar components (metallic salts, conducting salts (NaCl), pH adjusters, etc.) in order to modify the characteristics of the metals.

The measurement of the NaCl content is important. For this reason the company purchased a HI 4522 and a HI 4007 chloride ISE (to directly measure the chloride content), in this case the measurement accuracy is lower. HI 4015 silver ISE is used to determine the chloride content during manual silver-nitrate titrations.