

How Does pH Affect Cleaning? Session Questions and Answers

Q: I am cleaning a no-clean with a neutral based product. I started at 13% and now I find myself closer to 20% after a week to get the same result as I got at 13%. What is happening?

A: What ends up happening is a lot of people will set up their process that is close to the edge to qualify the most economical parameters. If you are too close, once acid adds into the bath, that pH may struggle a little bit. As you are getting closer to your bath life end, you may be adding chemistry to increase your cleaning capability. A way to mitigate that is to increase the concentration just slightly or select a cleaning chemistry that is not as affected by the pH.

Q: How fast can a PCB cleaner become acid?

A: That really depends on everybody's process. There are several hundred different paste and flux materials out there. In addition, you have other materials that go into your bath. How those all interact is where the magic is and determining that is process dependent. It also depends on how much chemistry is lost through exhaust or through drag-out as well as how much production and how much flux is being added to that.

Q: It is said that pH neutral products have better compatibility vs alkaline and you claim your products are inhibited, does your inhibitor become less effective over time as flux loads into the bath?

A: pH gives you a natural compatibility in some regards, but even a pH of two or three being added to a chemistry of seven can cancel out each other. What ends up happening is you can have compatibility issues with that pH shift, also with the components themselves. In addition to that, every cleaning chemistry, if it's engineered correctly, is not going to have a major shift and it should last for the life of the bath meaning that regardless of how much flux that you put into your bath, you should have consistent compatibility through the life of that even if cleaning slightly drops off.