

NC and OA T2T Questions Session Questions and Answers

Q: I am a contract manufacturer, are you telling me that if I take on a No-Clean job that needs to be cleaned I will have to buy another piece of equipment?

A: Yes, to be the bearer of bad news. If you're only doing water-soluble right now, there's really no way around it. The nice thing is the equipment that we are talking about is fairly low cost, but it'll only expand what you're doing right now. You'll find just typically, especially with CM's, once you do incorporate a chemistry wash process into your system, a lot of boards will be pushed through that. You'll love the way they come out and of course it drops your liability as well. You'll end up getting really clean product. Even if it's just water-soluble you'll notice the difference in product.

Q: You said those hydro words again what are they?

A: Hydrophobic is typically we use that when we talk about repelling water or splitting chemistry. They don't like to be together, like oil and water. We use it with some of our chemistries when we measure them, we look for a split. Hydrophilic means they come together and absorb into each other. We use it with some of our chemistries along with refraction when we look at testing concentrations through that. In this analogy, what we are talking about when we go to hydrophilic, we are talking about OA or water-soluble flux's ability to actually draw water.

Q: We only use NC flux and recently had a major customer return an entire lot of boards back to us due to field failure. It looks like we had a short under several devices. Can you explain to us what may have happened?

A: Without seeing the product, which is important, typically with NC if you haven't cleaned the NC, that's a very unusual thing to happen. Because of the encapsulation of the metal salts, you have what they consider low residue that is sitting on the board. My guess is that you may have tried to clean but didn't clean 100%. You may have unencapsulated some of those metal salts and if you did, all bets are off because you've partially cleaned. Without seeing the boards it's difficult to find fault with that, but if I was to take a guess, I would say you've unencapsulated metal salts, partially cleaned the boards, and you're having some type of dendritic growth underneath because of improper or impartial cleaning.

Q: Is it true you don't have to clean No-Cleans?

A: Yes. You don't have to clean no-cleans. A no-clean leaves a benign residue on the board so nothing will happen with that being left on your board. The problems come around with no-cleans when you partially clean you've unencapsulated some of the metal salts, that can be a big problem. Additionally, if you go into a conformal coat or paroling coat, if you don't clean off the surface, you don't get that real good adhesion of the paroling or the acrylic or conformal coat onto the board itself. It's actually bonding itself to the residue and that can cause problems later down the road. So the broad answer is you don't have to clean no-clean depending on your

process. If your process demands it, then yes you'll need to clean it and you'll need chemistry to do it.