

What Do You Need to Know About Passivation? Session Questions and Answers

Q: What are the differences in results between passivating with nitric or citric acid?

A: That's a good question. Alluding to some potential differences between using nitric acid and citric acid if you can't tell I'm partial to citric myself. However, when it comes to results of passivation, the results are going to be similar. They're both designed to passivate parts. The parameters might differ a little, but the result will be fine. However, the main difference in nitric acid is that it has more regulations on it. You might have to have more permitting to bring it into the plant because it's not as user friendly to the operators. However, one thing I do want to point out, before it ever goes into a passivation tank, I have noticed in my experience that nitric acid is a more efficient corrosion remover than citric acid. They'll both remove preexisting corrosion, but nitric acid will do it quicker and a little more efficiently. Those are the main differences between the two.

Q: Do process parameters tend to vary if you passivate with a spray machine?

A: There are a few variables that go into that. In particular, what parts you're passivating? If you're passivating screw machine parts and you put a lot into a basket, it can be tough for a spray washer to get to those screw machine parts in the middle of that basket. It's easier to immerse it so that everything is covered in the liquid, so that they're passivated. If you're passivating stainless-steel bars or something like that, that's not as much of an issue. With that being said, there isn't really any differences in parameters when it comes to spraying or immersing the parts in passivation. It just depends on your part orientation and your part geometry and that could be a reason to use one or the other.

Q: How do I know if I need to passivate my stainless-steel parts?

A: I think a lot of times your customer may require you to passivate parts they're purchasing. They will know whether or not they need passivation or if they need to abide by the ASTM A967 spec or not. That's one easy way you can find that out. Another way you could do that is a copper sulfate test that I mentioned earlier. If you're using that test on passivated parts and you get a failing result, you can still do that on parts that haven't been passivated to see if there is a need for further corrosion proof. Also, if those parts are susceptible to corrosion or not. I would first ask the customer to see if you have to abide by the ASTM specs and then I would try to copper sulfate test to see how your parts do in that test.