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# Ask Joe Powder

## Don't Gloss Over The Problem

Dear Joe,

**Q** Hope you are fine. My customers get surface problems such as gloss reduction and haze (regional) curing with gas oven. But there is no problem with TGIC system, just for Primid™ (HAA). What do you think? Do you think that should I use gas oven stabilizer?

Best regards,  
Ozlem E., Turkey

Hi Ozlem,

**A** Primid™ powders emit water as a volatile during cure in the oven. This can account for the haze in the oven air. If the oven has poor circulation and/or poor exhaust this could cause gloss variations. If the combustion of gas in the oven is poor (incomplete) this will cause gloss variations on the Primid™ powder surface. TGIC polyesters are less sensitive to this type of problem as they do not emit a volatile of cure in the oven.

— Joe Powder

## A New Wrinkle on Surface Prep

Hi there, Joe,

**Q** I'm writing from Gileme Custom Coaters at Culiacán, Mexico. I was just reading the last issue of Powder Coated Tough magazine. On the first question "Why Are We Falling Flat?" a doubt comes to my mind. I have run into that problem several times. What we did

is that we stopped washing these substrates and started sandblasting them instead. Since then we haven't had the problem again and now I know why thanks to your post. You mention that the problem occurs with polyester-based wrinkles. Recently I was offered a urethane-based wrinkle and we have tried it successfully a few times but without the washing process. Do you believe that if we go back to washing the substrates we might get again flat spots even on this urethane system? Or is the urethane chemistry for wrinkles different?

Thanks in advance for your time! Greetings!

P.S. Should I call you Joe or should I call you Mr. Powder?

Héctor G., Mexico

Hi Hector,

**A** Thank you for your letter. Ha—my friends call me Joe, you can call me Mr. Powder. Just kidding, of course! I would be careful, Hector, regarding making the change back to chemical cleaning from the blasting that you are currently doing. The "urethane" powder you are using may not be a true urethane at all. It may use the same cure mechanism as the polyester-based wrinkle. This is a common mistake as the polyester resin used in a urethane powder is very similar to that used in a polyester-wrinkle powder (both are hydroxyl polyesters). The difference between the two has to do with the curing agent. The wrinkle system uses tetra methyl methoxy glycoluril (TMMGU) whereas the urethane powder uses a blocked di-isocyanate (also can be a tri-isocyanate). It may be just a matter of misnaming the product.

If you really want to find out for sure, I suggest that you run a couple parts with the washer system and coat them with the new urethane powder. This should point you in the right direction.

— Joe Powder

## Coming Clean on Contamination

Hello Joe,

**Q** How are you doing? Trust all is well. Listen, I need an immediate help through you or all of your friends having experience in powder coating.



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I have a weird problem, and I am unable to find a root cause yet. In attached picture you will see a defect on some of the trays we paint with silver metallic having aluminum in it. On a particular area, we get this defect and occasionally on the edges. We thought it might be cleaning issue, but there is an excellent adhesion. It doesn't happen all the time nor with all parts but with majority of it.

We thought it might be back ionization issue but we painted 100 trays and inspected each one of them prior to going into the oven (each of them was perfect) and 18 came out with this defect.

Can you please guide me as to what could possible causes be or if you have seen this defect before? How can we re-create this defect to understand the root cause?

Any input will be really appreciated. Thanks and take care.

Kaleem



"Mysterious" Coating Defects - Is it Back Ionization or Surface Contamination?

Hi Kaleem,

**A** It's always nice to hear from you, but maybe not so much under these circumstances. This doesn't look like back-ionization to me. I think it's a foreign substance on the metal surface. These defects look like a surface tension issue. Something like a high molecular weight lubricant or wax. I would scrutinize your cleaning/pretreatment system and ensure that you are thoroughly removing all soils, oils and lubricants from the surface of the parts. You can use the time-tested water break test. If water beads

up on any part of the surface then there is an oily or waxy residue on the part. Removal usually can be accomplished by a well-controlled cleaning process. This means the right temperature, concentration and cleanliness of your cleaning solution.

*- Joe Powder*

*Joe Powder is our technical editor, Kevin Biller. Please send your questions and comments to Joe Powder at askjoe powder@yahoo.com.*

**Editor's Note:** Letters to and responses from Joe Powder have been edited for space and style.