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Ask Joe Powder

AAMA Lookin' for Specs

Q Hi Joe,

I am trying to locate specifications for different powder coat systems, including:

- TGIC polyester powder coat
- HAA polyester powder coat
- Epoxy powder coat

I have information for PVDF powder coat systems under AAMA 2604 and 2605. Any help you can provide would be greatly appreciated.

Thank you,
Ron

A Hi Ron,

Specifications are established nearly always based on performance rather than chemistry. The AAMA specifications used in the powder coating world are this way. Powder chemistries (e.g., polyester-TGIC, polyester-HAA, epoxy, etc.) can vary tremendously based on formulation. For instance, some polyester-TGIC formulas are only capable of passing AAMA 2603 whereas others pass AAMA 2604. Some epoxies pass a specification for laboratory furniture whereas others are used for gas and oil pipelines.

Hence it is not possible to provide a specification based on powder coating chemistry type but on the expected performance of the finish.

— Joe Powder

You Sure It's Cured?

Q Dear Joe,

I am using a gloss black polyester based powder paint in an environment where denatured alcohol is present. When the surface comes in contact with the denatured alcohol the gloss hazes over and becomes dull. Similarly, I have a polished steel/nickel plated part with an alcohol based liquid lacquer overcoat that is suffering the same fate.

I'm looking for the chemistry in a gloss black powder and a clear gloss powder that I can substitute for the lacquer that will survive the environment.

Thanks,
Steven S.

A Hi Steve,

Thanks for your question. Denatured alcohol will attack some powder coatings but not others. You mention that you're using a black high gloss polyester. Some polyesters are formulated for chemical resistance whereas others are more for decorative purposes. The one you're using may be the latter.

First, before you change coatings, ensure that the powder is achieving full cure. A less than fully cured powder will be attacked by organic solvents regardless of the chemistry. To check for cure, I recommend leaving the coated part in the cure oven for a longer period of time, say an additional 10 minutes and check the resistance to denatured alcohol. If it's acceptable, then problem solved.

If you see no change in resistance, then you should consider switching to a more chemical resistant product. Two chemistries immediately come to mind, polyurethanes and epoxies. Both provide very good to excellent solvent resistance. Epoxies fade in sunlight, so unless this product will never see the (direct) light of day, then you should opt for the polyurethane chemistry. Polyurethanes are a good choice for a high gloss finish as they have relatively low viscosity and provide a glossy surface even at somewhat thin films.

Regarding a clear coat to replace the lacquer, polyurethane is also a good choice. One thing to always keep in mind however, absolutely make sure that your coating is completely cured. Otherwise you cannot expect the film to resist chemical attack, chipping or scratches.

I hope that this helps.

— Joe Powder