



Silicone

is a slippery little sucker

Although it's very useful in many situations, silicone is devastating in a refinish paint shop, even in tiny quantities. Because it affects paint film, the coatings maker often gets the initial blame. However, given the extraordinary lengths paint manufacturers such as PPG go to in order to eliminate contamination, it's far more likely to come from elsewhere. Indeed, you might be surprised at where it can pop up.

Issues

Silicone is an aggressive, low surface tension contaminant. Typically, it appears as small dish-shaped imperfections in paint film, usually visible immediately after application, called "fisheyes", "craters" or "cissing". Two key factors make silicone particularly nasty. Firstly, it only takes incredibly small amounts of silicone to cause contamination – even in low parts-per-million concentrations. Secondly, it's easily transported in the air or via touch, making it extremely

difficult to determine the contamination origin. So, to eliminate contamination, you must understand how silicone gets into the paint environment.

Tips and recommendations

Common sources

Many everyday products contain silicone, including hand creams, deodorants, lubricating and penetrating sprays, compressor oil, tyre shine, waxes, polishes, and vinyl and leather rejuvenators, and so on. Don't forget the car being worked on can contain some of these.

Don't trust anything

There are others you may not even have considered. Recently, the PPG team came across a couple of examples. The first is the protective padding on a new panel stand – it should be cleaned multiple times to remove potential contamination, such as mould release agents. The second source is the air line from the painter's air-hood belt to the spray gun. Depending on the quality of hose, it's not uncommon to see silicone

contamination. Therefore, it pays to flush the line with an appropriate cleaner prior to using it for the first time.

Test first

Before using a new product, ask "is it paint friendly?" and check the Product Data Sheet, if possible. If that is inconclusive, apply a little of the product to a surface, such as a spray-out card, let it dry and apply paint over it to see the reaction.

Remove before painting

While silicones in waxes and polishes perform as potent surface-active agents that help repel water and dust, they can also cause problems when a panel needs repainting. All traces of these silicones need to be meticulously removed before painting.

Remove and start again

If a panel suffers significant silicone contamination during the refinish process, the only cure is to remove the affected layer by sanding and thoroughly cleaning. More importantly, the first priority is to find the source of the contamination and eliminate it.

Air system

Don't forget to schedule an annual service of your air system, from the compressor to the filtration units in the spray booth – they are "not set and forget"!

Prevention is better than cure

Once silicone infiltrates a paint shop/spray booth, it's extremely difficult to remove as it can't be physically seen and air turbulence in the booth can easily move it around.



This article supplied courtesy of John Hristias – PPG Business Support Manager Asia/Pacific