# PPG Automotive Coatings Low Surface Tension Materials Handling

Suppliers that produce or re-package product for PPG Automotive Coatings need to be aware that silicones (polysiloxanes) and other low surface tension materials can cause the crater paint defect. Inadvertent contamination of these materials at very low concentrations can cause the crater paint defect.

Low surface tension materials:

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| Petroleum based oils and greases | Some materials in this category cause craters, depending on the structure of the oil and the type of additives used to enhance properties |
| Detergents and defoamers | These materials can cause craters, depending on their composition |
| Chemical additives | Additives used to enhance properties in a range of materials (e.g. longer chain phthalates) can cause craters |
| Silicones (polysiloxanes) | These materials have the potential to cause severe levels of craters.<br>Polysiloxanes are popular ingredients in a large range of products – maintenance materials, release agents, personal care products (lotions, anti-perspirants, hair gels, etc.<br>Poly-di-methyl-siloxane (PDMS) based additives have frequently caused craters. |
| Perfluoropolyethers (PFPE) | These materials have the potential to cause severe levels of craters.<br>Polytetrafluoroethylene (PTFE) is a synthetic fluoropolymer that has numerous applications. Unreacted or uncured PTFE is typically used in high temperature greases. |

Risk Assessment and Controls:

Utilize a detailed 'process walk' and/or PFMEA tool to identify contamination risks throughout the facility. Where possible, utilize error proofing and visual aids (e.g. color-coding) to reduce the risk.

As well, ensure that all operators and maintenance personnel (including contractors) are trained on the contamination risks and procedures in place to reduce the risk of contamination.

Processing Equipment (blending/holding tanks, pumps, piping, transfer hoses, etc.)
Where possible, PPG product should be produced on separate equipment in a different area from the location of low surface tension and/or incompatible products.

If separate equipment cannot be used, a procedure needs to be established that includes adequate and effective equipment cleaning prior to processing PPG product.

Weighing/Dispensing/Sampling Devices (scoops, ladles, etc.)
Separate tools should be used for low surface tension materials. These tools should be marked accordingly and physically segregated.

Personnel
Check for instances where operators or maintenance personnel in the facility work with low surface tension materials and are then assigned to tasks related to processing PPG product. In these cases, ensure that gloves and protective clothing (aprons, smocks, etc.) are changed between the two processes. The work wear used in the low surface tension materials area should be marked accordingly and physically segregated.