

## ROHS COMPLIANCE IN PAINTS AND RESINS

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ROHS compliance requirements impact more and more suppliers. Clients require traceable analysis for the ROHS suite of elements.

Traceable ROHS standards are available for PE and PVC as well as for Polycarbonate matrix. Bench top EDX or WDX based implementation of ROHS compliant screening for these matrices was described previously at DXC 2007. Liquid samples and especially modern solvent based paints offer a much more difficult challenge:

- How can a design of experiment (DOE) approach be implemented to screen for more than 10 000 or more different formulations?
- How to best prepare a sample with pigment, different solvents?
- What IF clients have additional elemental requirements?
- How can raw materials be screened before they are dosed into the product?
- How can we avoid a false negative?

The talk will discuss a DOE based approach to screen for ROHS and additional elements in liquid paints.

Using organometallic compounds and adequate organic matrices it is possible to create DOE based calibration space. Key to the standard preparation is knowledge of stabilizers and homogenizers to keep the compounds in solution for the various matrices.

Measurement conditions are selected to cover the calibration space as well as potential interferences to minimize the risk for false negatives. With a suitable matrix correction approach, based on experience since 1999 with a universal Petro calibration, a set of calibrations is established and validated. Encountered Validation difficulties are discussed as is the approach for calibration maintenance.