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Title: Pigment interactions in Coatings and Colorants – Physical Chemical Principles

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Abstract:

Pigment dispersions in coatings and colorants are thermodynamically unstable systems. In order to maintain the stability of the system, formulators must use select additives which in conjunction with the proper pigment selection and processing conditions are critical in achieving the desired performance of the finished coating as well as its “Metastability”

The interactions of one pigment or combination of pigments with additives, resins, and solvents, can modify the coatings performance properties and therefore must be considered. Understanding the different pigment types and properties, and the concepts involved on these interactions, can help formulators avoid potential problems.

This paper will focus on the interaction between dispersing agents, solvents, resins, and thickeners with the pigments, and the physical chemical principles involved in these interactions. The theory behind flooding, floating, settling, and gelling will also be discussed.

