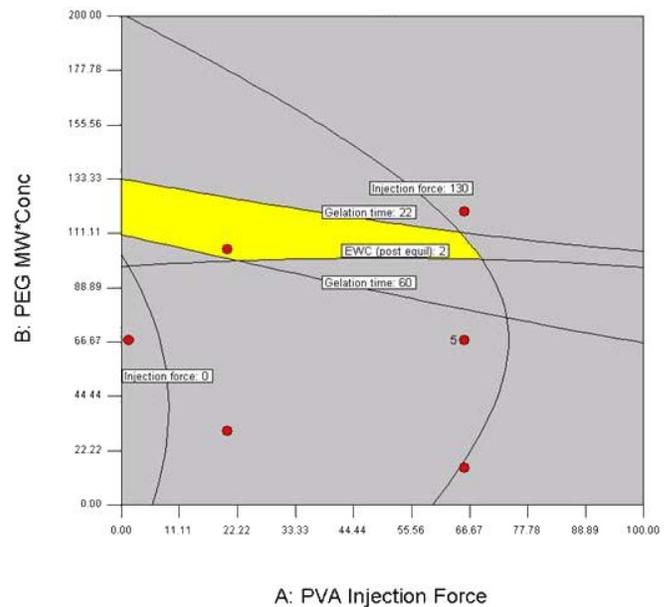
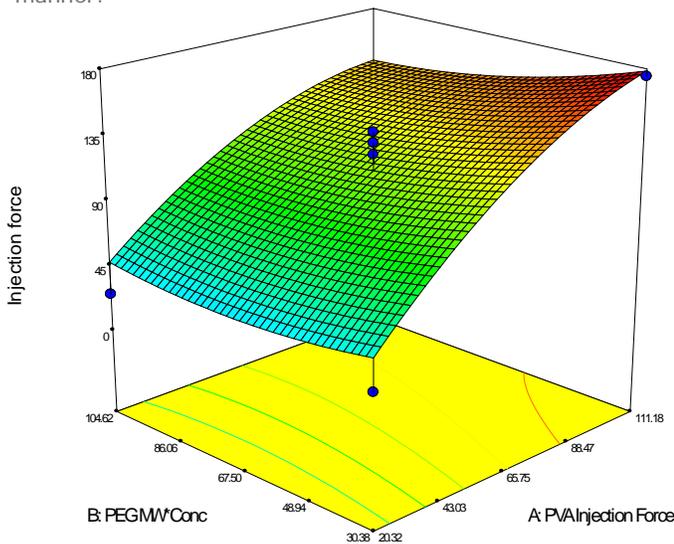




Design of Experiments & Formulation Design

Summary

Traditional strategies for material development can be involved, requiring gradual iteration towards a target set of properties. Design of Experiments (DoE) allows a structured, statistically robust approach to material development and generates predictive tools for determining optimal formulations from a minimum of experiments. Although DoE does not replace intuition and inspiration, the careful use of the technique allows large parameter spaces to be explored in a highly efficient manner.



Data and Outcomes

Experience is important with DoE results. Often, there are a few more steps necessary to make the most of the DoE data because a clear understanding of the physical processes involved is critical to fully leverage the experimental results. As a project progresses, priorities can change. In this situation, the DoE data can be manipulated to address changes in customer interests or needs and can be used to predict properties that were not part of the initial requirements.

Description

Design of Experiments (DoE) is a technique for developing an experimental matrix design that requires specific inputs, measurable outcomes, weighted interests, and experience in reviewing the output. At CPG, our experience will help you plan the shortest route to improved product performance. Utilization of a well planned DoE saves supplies, energy, and time. Our experience can help you minimize necessary resources while maximizing product performance. Our broad range of backgrounds allows us to help our clients in choosing relevant parameters and decision weights. Efficient lower cost Research Development and problem solving is possible due to more information from fewer experiments, and the outcomes can be used to predict new formulations and materials

Uses

- Formulations
- Material optimization
- Property prediction
- Failure analysis