Blending Tutorial - Seminar

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What you will learn:

Blending is an important unit operation in many industries. However a systematic method of selecting the proper blending system for the mixing task at hand is not common knowledge. Thus the selection of a blender is typically a trial and error process. In addition, scale up of blending operations requires knowledge of how material flow properties, blender geometry, and blender operation parameters influence blending quality. Segregation is the opposite of blending and occurs due to a variety of mechanisms. The fines may sift through a coarse matrix resulting in size separation of particles. The fines may also be carried by air currents and deposit in process vessels where entrainment velocities decrease below some minimum value. Sometimes the blending velocity profiles in a particular blender also cause segregation. The selection of the proper blender then depends on the type of segregation occurring in the material during blender operation. This tutorial discusses the effect of flow properties on blender design and operation. You will learn the relationship between segregation and blender selection. We will analyze all general blender types and provide guidance for blender selection. We will discuss how to model both continuous and batch blending process to be able to predict the blend quality and product uniformity at various size scales. The tutorial is designed to provide practical information to practicing engineers, quality control personnel, plant managers, and formulators.