

## A Study on Phase Transformation of an Active Pharmaceutical Ingredient in Hydrate Form

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The transformation from monohydrate to anhydrous form of an active pharmaceutical ingredient during crystallization was investigated. By simultaneously using the in-situ measurement: FBRM (Focused Beam Reflectance Measurement) and PVM (Particle Video Microscope), the transformation from monohydrate to anhydrous form was determined in real time. Concurrently, these forms were identified by offline analysis technique: scanning electronic microscopy (SEM), crystallography (XRPD), thermal analysis (DSC, TGA). Water content or water activity is the main factor determining the stability of anhydrous and monohydrate. The kinetic of phase transformation was found. The effect of agitation and temperature on phase transformation was also studied.