

ystral gmbh · Wettelbrunner Straße 7 · 79282 Ballrechten-Dottingen

Creating the best Rheology with ystral

Rheological additives are necessary to give the coating optimal flow characteristics and ideal viscosity, not only during subsequent application but also during storage. They are typically available in powder form and are used in very low concentrations due to their strong thickening effect. To achieve maximum performance, they must be colloidally dispersed in the liquid phase.

The difficulties associated with processing these powders are also related to their specific properties. They are dusty, sticky and always form agglomerates.

Phyllosilicate-based rheology additives require complete delamination and full activation by intensive dispersion at the moment of powder wetting. This cannot be achieved with conventional dissolvers. As a result, the desired so-called card house effect is only partially achieved. When dissolvers are used, the viscosity and thixotropy fluctuate from batch to batch and the paints and lacquers in the delivery containers undergo uncontrolled in-can-thickening.

The situation is quite different when high-molecular thickening polymers are used. These become extremely sensitive to high shear forces after hydration. As a result, they are always already partially destroyed when processed with conventional dissolvers.

ystral has developed a process in which the powder particles are separated by vacuum expansion at the moment of introduction into the liquid and are immediately and completely wetted and delaminated. There is no need for a long subsequent dispersion. Phyllosilicates are fully activated. Polymers are not damaged. The rheological effect is maximised. There is no post-thickening in the delivery container.

This system is demonstrated using the example of Methocel, a highly effective thickening agent based on celluloseether. The powder is dispersed directly cold, with no dust, no risk but maximum performance.

Dr.-Ing. Hans-Joachim Jacob

- Studied at the TU Dresden
- Doctorate in mechanical engineering
- With ystral since 1990
- Senior Expert Process and Application
- Special expertise: mixing and dispersion in lacquer and paint production

