

BYK-AQUAGEL 7100

New, highly effective, inorganic rheology additive for aqueous systems with excellent incorporation properties

Natural layered silicates, often referred to as “clay,” are well-known and widely used rheology additives in aqueous systems, such as emulsion paints and construction chemicals. This raw material contains accessory minerals that must be removed via a purification process before it can be used as an additive. If a conventional drying process is applied, this leads to an agglomeration of the clay platelets.

For this reason, BYK-AQUAGEL 7100 is purified in a very elaborate procedure and subsequently “shock dried.” This special process forms a surface structure that is

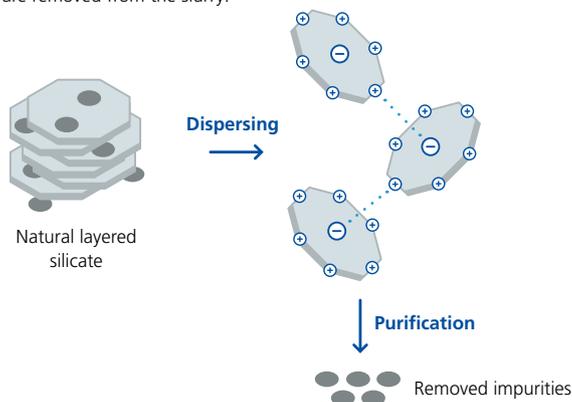
significantly more open and delaminated compared to standard products. The structure is permanent and already slightly preactivated.

The benefit is that, after incorporating while stirring, the layered silicate is easier to dissolve. Longer dispersion times with high shear forces are therefore not required and the final viscosity is achieved sooner. The result is a significant thixotropic flow behavior for a wide range of applications in paints, coatings, and aqueous construction formulations. One particular benefit is that BYK-AQUAGEL 7100 enables the manufacturing of flowable intermediates.

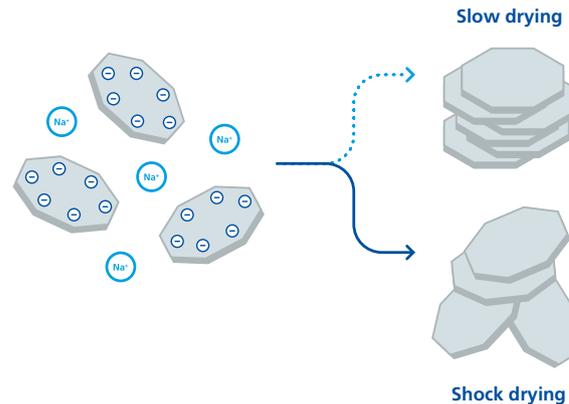
Shock drying BYK-AQUAGEL 7100 produces a permanent, delaminated structure

In a first step, the layered silicate is dispersed in water and the platelets are separated from each other.

During the following purification, all impurities are removed from the slurry.



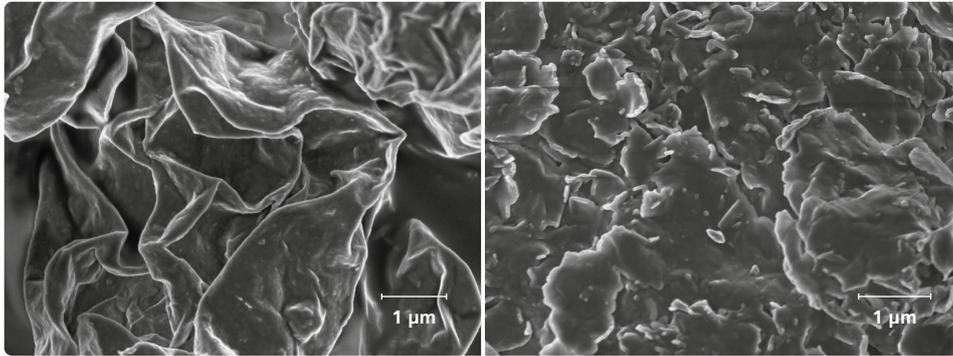
Subsequent shock drying preserves the open structure.



Benefits

- Shock drying produces a permanently open, delaminated, and slightly preactivated structure
- Easy incorporation and immediate activation
- Improved rheological effectiveness → lower additive dosage for achieving the desired final viscosity
- Thixotropic flow behavior
- Longer-term flowable intermediates
- Excellent anti-settling and anti-sagging properties in the final product
- No significant post-thickening

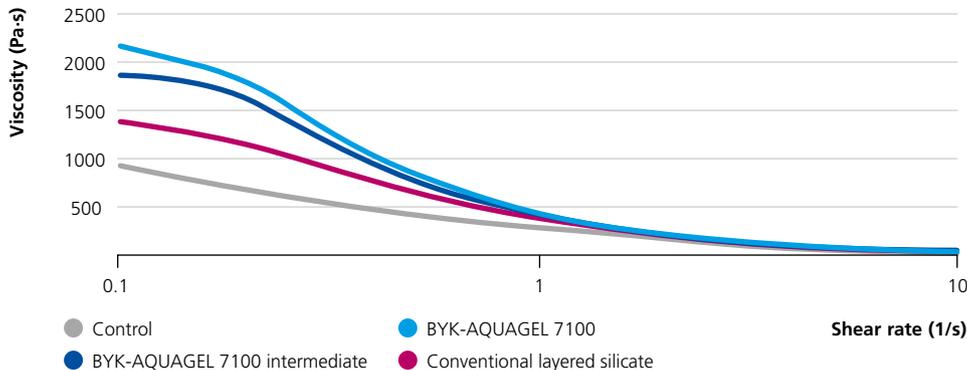
Comparison of layered silicates after purification and drying



BYK-AQUAGEL 7100 has an open structure with a larger surface

Layered silicate that has undergone conventional purification and drying

BYK-AQUAGEL 7100 – Improved rheological effectiveness compared to conventional layered silicates



Test system: Highly filled PVAc-based wall paint; additive dosage (as supplied) form based on the total formulation: 0.5 %; intermediate: 8 % BYK-AQUAGEL 7100 in water

This effect occurs irrespective of whether BYK-AQUAGEL 7100 is incorporated directly or as an intermediate.

Permanent flowability of an intermediate with BYK-AQUAGEL 7100



BYK-AQUAGEL 7100



Conventional layered silicate

Additive dosage as supplied: each 7.5 % in water

The high dosage does not lead to an undesired increase in viscosity in the intermediate.

Areas of application

- Architectural coatings
- Wood and furniture coatings
- Construction chemicals
- Marine and protective coatings
- Adhesives and sealants

Technical properties

- Bulk density: 450–650 kg/m³
- Moisture content: max. 13 %
- Delivery form: cream-colored powder

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This issue replaces all previous versions.

