

# ChemBrief



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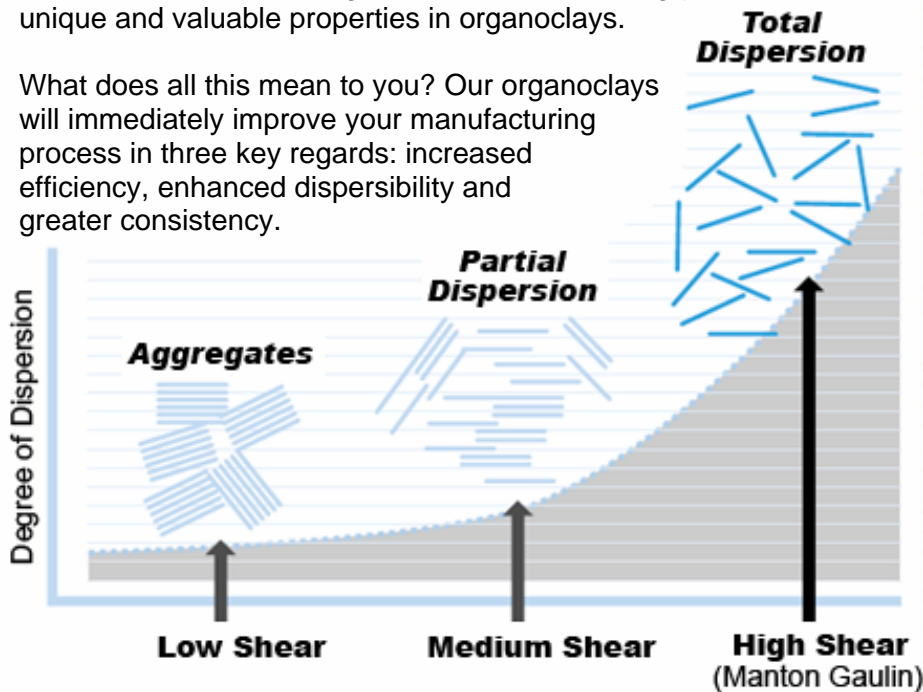
## Proprietary SCP shearing process gives coating and ink products superior dispersion and consistency.

There has been a lot of talk lately about Southern Clay Products' (SCP) shearing technology. Several years ago, SCP's expert scientists discovered that passing clays through a Manton Gaulin homogenizer (MG) resulted in valuable benefits in the manufacture and use of organoclays. These discoveries are protected by patents and are used in the manufacture of our Claytone, Cloisite and Garamite products.

The organoclay manufacturing process typically involves reacting certain clay minerals (called smectites) with cationic surfactants. While the untreated clays readily disperse in and thicken water, they are of little use in solvent-based formulations. However, by carefully selecting the surfactant and the surfactant dose level, organoclays can be engineered to work in a variety of non-aqueous systems.

In addition, SCP scientists discovered that applying the MG treatment at different stages in the manufacturing process created unique and valuable properties in organoclays.

What does all this mean to you? Our organoclays will immediately improve your manufacturing process in three key regards: increased efficiency, enhanced dispersibility and greater consistency.



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Efficiency is enhanced by processing the clay slurry through an MG prior to reaction with the surfactant. Among other things, this increases the amount of clay surface that is available for reaction with the surfactant, resulting in a greater ability to create structure (viscosity, sag, thixotropy, etc.).

After treatment with the surfactant, dispersibility is improved by passing the clay slurry through the MG. This post treatment leads to a more open structure in the finished organoclay. The open structure allows solvents to wet the clay surfaces more readily, allowing the structure to disperse with less shear. This can be very important in applications where variations in shear or formula composition make constant dispersion of organoclays more difficult.

Consistency of performance is enhanced by both of the above processes. The pre-reaction treatment has been shown to smooth out variations in the smectite ores used to make organoclays. Due to a number of factors, such as variations in overburden weight and composition, drainage and weathering, it is difficult to generate consistently the same amount of surface area. The MG treatment is able to overcome these obstacles and create a consistent slurry year in and year out.

The post-reaction treatment also leads to improved product consistency. Because most of the surfactants used in organoclay production form complex, stable micelles, it is hard to obtain a uniform coating at the molecular level. Treating the surfactant-treated slurry with the MG insures a consistent and uniform coating. This translates into more consistent performance in your products.

The introduction of MG processing has allowed us to use clays that would have otherwise been unacceptable. Only a tiny percent of the world's bentonite reserves are suitable for making high quality organoclays. Finding those clays is expensive and uncertain. Exploration, testing, leasing and regulatory costs are escalating.

The introduction of MG processing has allowed us to use clays that would have otherwise been unacceptable. It is now much easier for us to find deposits of clay that we can use in our patented organoclay processes. This means we can assure you of consistent, cost effective, high performance organoclays for many years to come.

*For more information on how Southern Clay Products can assist you, please contact us at (800) 324-2891 or visit us on the internet at [www.scprod.com](http://www.scprod.com).*



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