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SINOMA Magnesium Aluminum Silicate (MAS) Nano Gel products are natural bentonite that are water-washed to optimize purity and performance. Bentonite is valued for its ability to swell in water and to impart useful rheological properties to aqueous compositions. The way in which SINOMA MAS functions as a thickener and stabilizer in aqueous compositions is a result of the clay structure, which accounts for the particular way in which this clay hydrates in water, and forms the desired colloidal structure. A single bentonite platelet is composed of a central alumina or magnesia layer joined to silica layers.

Cations exchange within the crystal lattice result in negatively charged platelet faces. Lattice discontinuities account for a very slight positive charge on edges. Once the MAS is hydrated, the weakly positive platelet edges are attracted to the negatively charged platelet faces. A three dimensional colloidal structure forms, commonly called the “house of cards” showed in Fig.1. This structure is valued for its ability to trap and segregate

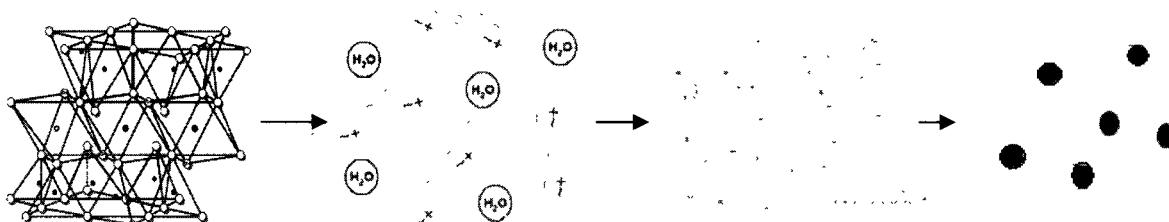


Fig.1 The formation of colloidal structure in aqueous compositions

to trap and segregate solids in a suspension. Excellent dispersion and suspension as well as thixotropy ability of MAS are performed as a result of this colloidal structure. MAS nano gel well applied as high-performance pesticide additives, provide many advantages since it can overcome problems of stratification and sedimentation, and improve fluidity in pesticide SC formulations. Better stability of MAS, we found in the experiments, appears in anionic and non-ionic surfactants system.

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#### Application of the Thickener in SC Formulation

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Application of MAS in SC is introduced, and anionic and/or nonionic surfactant can be used in this system.