

Product Name: Magnesium Aluminum Silicate (MAS)

CAS No.: 12199-37-0 / 1327-43-1

1. PRODUCT DESCRIPTION

Magnesium Aluminum Silicate is a purified, water-washable colloidal clay derived from natural silicate minerals. It acts as a multifunctional rheological additive, providing excellent suspension, stabilization, and thickening properties. It is widely used to prevent the settling of pigments and to stabilize emulsions in various aqueous industrial and consumer applications.

2. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Property	Specification
Appearance	Off-white to cream-colored granules or powder
pH (5% aqueous dispersion)	9.0 – 10.5
Moisture Content (105°C, 2h)	≤8.0%
Viscosity (5% aqueous soln.)*	200 – 2500 mPa·s
Al/Mg Ratio	0.5 – 1.2
Acid Demand	2.0 – 4.0

Property	Specification
Whiteness	≥75%

3. KEY APPLICATIONS

Agrochemicals: Suspension concentrates (SC) for pesticides and fertilizers to prevent hard-packing.

Consumer Goods: Toothpaste, liquid soaps, and shampoos (improves texture and stability).

Pharmaceuticals/Cosmetics: Topical creams, lotions, and sunscreens as an emulsion stabilizer.

Industrial Coatings: Water-based paints and primers for anti-settling and improved brushability.

Ceramics: Suspension of glazes and improvement of green strength.

4. PERFORMANCE CHARACTERISTICS

Excellent Suspension: High yield value at low concentrations effectively keeps heavy particles suspended.

Synergistic Thickening: Exhibits strong synergy when used with organic polymers (e.g., Xanthan Gum, CMC, HPMC).

Electrolyte Stability: Highly resistant to degradation by electrolytes and salts compared to synthetic silicates.

Temperature Stability: Maintains viscosity and stability across a wide temperature range.

Safe & Inert: Non-toxic, non-irritating, and chemically stable.

5. DISPERSION INSTRUCTIONS

To ensure maximum hydration of the clay flakes:

High Shear: Use high-shear mixing equipment (e.g., Cowles dissolver).

Water Temperature: Using warm water ($40^{\circ}\text{C} - 60^{\circ}\text{C}$) significantly reduces the time required for full hydration.

Order of Addition: Always add the Magnesium Aluminum Silicate to the water first, allowing it to hydrate fully before adding other ingredients like surfactants or salts.

6. STORAGE & HANDLING

Storage: Store in a dry, cool place. Ensure the packaging is kept closed to prevent moisture absorption and contamination.

Shelf Life: 36 months from the date of manufacture when stored in original, unopened containers.