

Basic Components of Acrylic Emulsion Paints

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1. Binder (Acrylic Emulsion Polymer)

- Function: Forms the paint film and binds all components together.
- Examples: Pure acrylic, styrene-acrylic, or vinyl-acrylic copolymers.
- Properties: Provides adhesion, durability, water resistance, and UV stability.

2. Pigments

- Function: Provide color, opacity, and hiding power.
- Types:
 - Prime Pigments - e.g., Titanium dioxide (TiO₂) for whiteness and opacity.
 - Color Pigments - Organic or inorganic colorants.

3. Extenders (Fillers)

- Function: Reduce cost, improve coverage and film properties.
- Common Examples: Calcium carbonate, talc, clay, silica.

4. Solvent (Water)

- Function: Acts as a carrier medium to disperse other components.
- Property: Evaporates after application, leaving a solid paint film.

5. Additives

- Function: Enhance paint performance, stability, and application properties.
- Typical Additives:
 - Dispersants - Improve pigment dispersion.

- Thickeners - Control viscosity and flow (e.g., HEC, ASE).
- Defoamers - Reduce air entrapment and surface bubbles.
- Wetting Agents/Surfactants - Aid in substrate wetting.
- Biocides/Fungicides - Prevent microbial growth in-can and on painted surface.
- Coalescing Agents - Help film formation at lower temperatures.