

TECHNICAL DATA SHEET

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PRIMAL™ SF-016 Acrylic Emulsion

Pure Acrylic Polymer For Interior and Exterior Paints

Description

PRIMAL™ SF-016 Acrylic Emulsion has been designed for the formulation of low odour, interior and exterior coatings. It has excellent pigment binding capacity, which permits formulation of flat wall paints at high pigment volume concentration while maintaining good scrub resistance and excellent exterior durability capability. Thus, PRIMAL™ SF-016 can be formulated economically in solvent free flat paints compared to competitive technologies and has large formulation versatility.

High PVC wall paints based on PRIMAL™ SF-016 Acrylic Emulsion exhibit excellent wet colour rub, particularly visible in deep tones, which further distinguish it from other solvent free products and allow the formulation of superior coatings.

In addition, PRIMAL™ SF-016 Acrylic Emulsion allows the manufacture of interior sheen paints with good resistance to block and dirt pick up. Its all acrylic composition permits use in exterior coatings for mineral substrates such as masonry and on wood.

Environmental Properties

- Film formation without the need for coalescent and solvent
- Ammonia-free*
- Formaldehyde-free*
- Alkyl phenol ethoxylate-free*
- Low residual monomer levels and low odour

*Ammonia, Formaldehyde and APEO are not intentionally added and are not knowingly introduced from another raw material.

Characteristics of the Product

- High pigment binding capacity affording economical interior wall paints
- Excellent scrub resistance
- Easy removal of stains
- Exterior durability

Typical Physical Properties

(The properties are typical but do not constitute specifications)

Property	Typical Values
Appearance	Milky white liquid
Solids Content	50–51%
pH	8.5–9.5
Brookfield LV Viscosity (spindle 3, 60 rpm)	<500 mPa.s
Minimum Film Formation Temperature	~1°C
Specific gravity (wet polymer)	1.06 g/cm ³
Specific gravity (dry polymer)	1.12 g/cm ³

Formulation Guidelines

PRIMAL™ SF-016 Acrylic Emulsion allows specific solvent-free formulation development and demonstrates wide formulation latitude from satin to flat paints including wood stains, which are suitable for both interior and exterior applications. It is a versatile binder for paint companies wishing to stock in bulk a minimum number of raw materials.

Below are some guidelines to help formulators: Dispersants

In our studies, good pigment dispersion and stability results were obtained with OROTAN™ ER or OROTAN N™ 4045 at 0.8%–1% active ingredient level based on pigment and extenders.

Defoamers

Standard defoamers can be used with PRIMAL™ SF-016 Acrylic Emulsion. For example, Tego Foamex 1495 or Byk-024 gives good results.

Rheology Modifiers & Thickeners

ACRYSOL™ RM-12W, ACRYSOL™ DR-73 ER, ACRYSOL™ DR-72 and HEUR Rheology Modifiers (ACRYSOL™ RM-8W, ACRYSOL™ RM-5000) have all been used successfully in formulating semi-gloss to matt paints based on PRIMAL™ SF-016 Acrylic Emulsion.

Coalescents and co-solvents

No coalescing agent is required with PRIMAL™ SF-016 Acrylic Emulsion to achieve good film formation down to 0°C. However, an addition of UCAR™ Filmer IBT at 2–3% on polymer solids improves early water resistance in exterior masonry formulations.

Extenders and opaque polymer

Standard extenders can be used in paints formulated with PRIMAL™ SF-016 Acrylic Emulsion. ROPAQUE™ Ultra E Organic Opacifier has shown excellent results when used in satin to matt formulations based on PRIMAL™ SF-016 Acrylic Emulsion. Additionally, the use of ROPAQUE™ Ultra E in exterior coatings is suggested to further improve dirt pick up, algae and mould resistance and color retention.

Adjustment of pH

The pH of paints based on PRIMAL™ SF-016 Acrylic Emulsion needs to be adjusted between 8.5–9.5 to ensure good mechanical shear stability and avoid flocculation.

Any base can be used for pH adjustment, the final choice will depend on the paint type (typically ammonia for exterior coatings and low odour hard bases for interior).

Biocides

Although standard in-can preservatives could be used by the formulators, it is always recommended to test compatibility and efficacy in small scale quantities.

ROCIMA 564 is suggested as in-can preservative. If PRIMAL™ SF-016 Acrylic Emulsion is used in wet rooms or in exterior coatings it is suggested to use a film preservative like ROCIMA 350.

Handling Precautions	Before using this product, consult the Material Safety Data Sheet (MSDS)/Safety Data Sheet (SDS) for details on product hazards, recommended handling precautions and product storage.
Storage	Store products in tightly closed original containers at temperatures recommended on the product label.
Disposal Considerations	<p>Dispose in accordance with all, local or national regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.</p> <p>It is the user's responsibility to verify that treatment and disposal procedures comply with local or national regulations. Contact your Dow Coating Materials Technical Representative for more information.</p>
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