



PRIMAL™ E-357 Emulsion

For Factory Applied Coatings over Cementitious or Primed Metal Substrates

Regional Product Availability

- Asia-Pacific

Description

PRIMAL™ E-357 Emulsion is a hard thermoplastic, 100% acrylic polymer which offers excellent exterior durability, fast hardness development and high block resistance. PRIMAL E-357 Emulsion is an excellent choice for use in coatings to be applied on cementitious substrates, such as fibre cement panels for façade and roofing, concrete elements and corrugated sheets.

PRIMAL E-357 Emulsion is designed to perform best on industrial coating lines where good preheating and forced drying conditions are available.

PRIMAL E-357 Emulsion facilitates the formulation into both pigmented coatings and clear varnishes for use directly over fibre cement or over pigmented paints.

Key Features

- 100% Acrylic polymer
- Excellent exterior durability
- Fast hardness development
- High block resistance

Benefits

- An excellent choice for formulating quality exterior roofing paints.

Typical Properties

(These properties are typical but do not constitute specifications).

Property	Typical Values
Appearance	Opaque, white to off-white liquid
Solids, by weight, %	47.5
pH	9.6
Density, wet, (g/ml)	1.08
Minimum Film Forming Temperature ($\pm 2^{\circ}\text{C}$)	55
Viscosity (Brookfield LV #1, 30 rpm, 25°C), cps	< 100
Storage precautions	Protect from freezing



Formulation Guidelines

PVC and Choice of Pigments

With PRIMAL™ E-357 Emulsion, as in all coating systems, the pigment loading and choice of pigments has a strong influence on final exterior durability. For optimal performance, we recommend pigment volume concentrations not significantly higher than 20% for facade and 25% for roofing applications. We recommend the choice of high durability pigments. Although many kinds of extenders can be used we recommend the use of Mica in general due to the better acid and chemical resistance of this extender.

Coalescent

The choice and amount of coalescent has a major influence on film formation. For optimal performance the paint film should be sufficiently coalesced so as to prevent microscopic defects such as cracks and blisters. In general we recommend a level of 10% Butylglycol and DOWANOL™ PnB or DPnB Coalescents on polymer solids in applications where preheating and force drying conditions are available.

Additives

OROTAN™ 731A or ACRY SOL™ I-62A Dispersants are the preferred dispersants for the formulation of PRIMAL™ E-357 Emulsion. A combination of excellent dispersing properties with a very low water sensitivity is offered when using these dispersants. OROTAN 731A Dispersant (25%) usage level is half of that of ACRY SOL I-62A Dispersant.

The use of TRITON™ CF-10 Surfactant offers enhanced wetting of difficult pigments.

We recommend a careful selection of defoamers and additives to obtain good curtain coater stability. Cellulosic thickeners or combinations therefore with rheology modifiers like ACRY SOL RM-2020NPR Rheology Modifier offer excellent results.

Waxes, like SlipAyd SL 300, are often added to improve blocking resistance and stacking properties.

Exterior Performance Results

Time	Colour Fade	Chalk	Surface Dirt	Embedded Dirt
3 years	10	10	8+	10
6 years	7	9	9	9
8 years	6	9	9	9
10 years	9	9	9	9



Suggested Starting Point Formulation

**Dark Grey Paint for Fibre Cement panels
Based on PRIMAL™ E-357 Emulsion
Formulation: TF-153-62w**

Material Name	Function	Kg
Grind in a Cowles at high speed for about 20 minutes:		
Water	Diluent	92.0
Natrosol 250HHR	Thickener	0.5
Ammonia (28%)	pH control	0.5
ACRYSOL™ I-62A (25%, pH 9.3)	Dispersant	19.0
TRITON™ CF-10	Surfactant	0.5
Byk 024	Defoamer	4.7
ACRYSOL™ RM-8W	Rheology Modifier	1.9
Butyl glycol	Coalescent	9.00
Ti-Pure R-960	Titanium Dioxide	30.2
Bayferrox 318M	Pigment	173.2
Mica W!	Extender	26.5
	Grind Total	358.0
Letdown:		
PRIMAL™ E-357	Emulsion	595.8
Premix		
Grind above	-	358.0
Water	Diluent	8.5
DOWANOL™ DPnB	Coalescent	7.4
Butyl glycol	Coalescent	8.5
Surfynol 104H	Surfactant	2.8
Slip Ayd SL 300	Surface Conditioner	19.0
	Total	1000.0
Expected Formulation Properties *		
pH	8.7	
Viscosity, Ford 4-cup, sec	24	
PVC, %	18	
Volume solids, %	38.8	
Weight solids, %	52.8	

*Properties are typical but do not constitute specifications

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

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Coating Materials Technical Representative for more information.

Chemical Registration

Many countries within the Asia-Pacific require the registration of chemicals, either imported or produced locally, prior to their commercial use. Violation of these regulations may lead to substantial penalties imposed upon the user, the importer or manufacturer, and/or cessation of supply. It is in your interests to ensure that all chemicals used by you are registered. Dow does not supply unregistered products unless permitted under limited sampling procedures as a precursor to registration.

Note on Asia-Pacific Product Line

Product availability and grades vary throughout the countries in Asia-Pacific. Please contact your local Dow Coating Materials representative for further information and samples.

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