



PRIMAL™ AC-2337 Pure Acrylic Emulsion Polymer

Regional Product Availability

Europe

Product Description

PRIMAL™ AC-2337 Pure Acrylic Emulsion Polymer is an innovative aqueous, all-acrylic binder designed for the formulation of exterior house paints in the European climate. PRIMAL™ AC-2337 Pure Acrylic Emulsion Polymer builds on the legacy of proven great performance and durability properties of PRIMAL™ AC-337 and is very similar, both compositionally and morphologically.

PRIMAL™ AC-2337 Pure Acrylic Emulsion Polymer while maintaining the proven benefits of PRIMAL™ AC-2337 Pure Acrylic Emulsion Polymer has additional functionality to enhance Dirt Pick-Up Resistance, and hence contributes to superior gloss and colour retention.

PRIMAL™ AC-2337 Pure Acrylic Emulsion Polymer has an excellent balance of water resistance and mechanical properties, providing long lasting wood protection against the effects of weathering damage.

Application

- 100% acrylic composition
- APEO* free
- Low odour
- Wide formulating window with good balance of dry film properties

Environmental Properties

- Formaldehyde-free*
- Alkyl phenol ethoxylate-free*

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

Typical Properties

These are typical properties, not to be construed as specifications

Property	Typical Values
Appearance	Milky white liquid
Solids content	45.0 – 46.0 %
pH	8.5 – 9.5
Brookfield LV viscosity (Spindle 3, 60 rpm)	<1500 mPa.s.
Minimum Film Formation Temperature	ca. 14°C
Specific Gravity (wet polymer)	1.06 g/cm ³
Specific Gravity (dry polymer)	1.13 g/cm ³

Formulation Guidelines

PRIMAL™ AC-2337 Pure Acrylic Emulsion Polymer is a pure acrylic binder that can be used in high quality exterior coatings to be applied on walls or wood. Below are some formulation guidelines.

Dispersants

The versatile and effective hydrophobic dispersing agent OROTAN™ 731A ER Dispersant is an excellent choice to contribute to good performance of formulations based on PRIMAL™ AC-2337 Pure Acrylic Emulsion Polymer.

Defoamers

In all systems, the best results were achieved by using *Dow Corning®* 108F Additive in the grind and in the letdown.

Dow Corning® 8590 Additive in the grind combined with *Dow Corning®* 74 Additive in the letdown was also found to offer efficient defoaming performance.

Dow Corning® 108F Additive, used as sole defoamer or the combination of *Dow Corning®* 8590 Additive in the grind and *Dow Corning®* 74 Additive in the letdown stage were found to provide very efficient defoaming performance.

Rheology Modifiers and Thickeners

PRIMAL™ AC-2337 Pure Acrylic Emulsion Polymer has been designed to have good response to associative thickeners.

EUR thickeners like ACRY SOL™ RM-5000 or ACRY SOL™ RM-2020E Rheology Modifiers were found to be the most suitable to achieve excellent flow properties. If higher low shear viscosity is required, the addition of low level of ACRY SOL™ RM-8W , ACRY SOL™ RM-8WE or ACRY SOL™ RM-845 can be done without affecting flow and application performance. When more in-can structure is desired, the rheological profile may be modified by adding small amounts of ACRY SOL™ SCT-275 or ACRY SOL™ RM-725.

PRIMAL™ AC-2337 in combination with ACRY SOL™ RM-12W, or ACRY SOL™ RM-12WE offers the opportunity to formulate “thixotropic like” coatings, enabling to formulate translucent wood stains with non- drip properties.

Coalescents and Co-solvents

A water immiscible coalescent like UCAR™ Filmer IBT Coalescing Agent at a level of 9 to 10% on binder solids is highly recommended, ensuring good film formation, acceptable block resistance and excellent exterior durability.

A co-solvent can be added to fine tune open time and flow properties; propylene glycol used at ~3% level on total formulation would be our recommendation.

Extenders and Opaque Polymer

The use of ROPAQUE™ Ultra E Organic Opacifier can help reduce the amount of titanium dioxide, thus formulation cost without affecting dry film appearance and resistance characteristics.

PRIMAL™ AC-2337 Pure Acrylic Emulsion Polymer formulated with a combination of Micro Mica and ROPAQUE™ Ultra E gives a very good balance of (low) moisture up-take and (high) water vapour permeability, which contributes to the good protection of exterior wooden constructions.

When formulating translucent stains, we recommend the addition of pre-dispersed transparent iron oxide pastes to give the required shade.

Biocides

Although standard in can preservatives could be used in paint formulations, it is always recommended to test them for compatibility and efficacy.

High Build Woodstain

Based on PRIMAL™ AC-2337 Pure Acrylic Emulsion Polymer

HBS-2337-00-01

Material Name	Kilograms	Liters
PRIMAL™ AC-2337	647.25	614.61
<i>Dow Corning®</i> 108F Additive	2.00	2.00
Water	304.80	304.80
UCAR™ Filmer IBT Coalescent Solvent	26.50	27.90
ACRY SOL™ RM-725 Rheology Modifier	1.77	1.71
ACRY SOL™ RM-12W Rheology Modifier	6.88	6.59
ROCIMA MB2X Biocide	2.00	1.77
BIOBAN 350 Polymer Shielded Technology	8.80	8.00
Totals	1,000.00	967.38

Paint Properties

Volume Solids	27%
Weight Solids	29%
Density	1.03
pH	~8.1
Coalescent (based on polymer solids)	9.0%

Viscosities

Krebs Stormer (KU)	60-64
ICI Cone & Plate (Poise)	0.25 – 0.35
Brookfield (spindle 4 / 60 rpm) (mPa.s)	2450-2650

Medium Build Woodstain
Based on PRIMAL™ AC-2337 Pure Acrylic Emulsion Polymer
MBS-2337-00-01

Material Name	Kilograms	Liters
PRIMAL™ AC-2337 Acrylic Emulsion	483.19	458.82
<i>Dow Corning®</i> 108F Additive	2.00	2.00
Water	466.19	466.19
UCAR™ Filmer IBT Coalescent Solvent	19.79	20.83
ACRY SOL™ RM-725 Rheology Modifier	6.88	6.64
ACRY SOL™ RM-12W Rheology Modifier	11.15	10.69
ROCIMA MB2X Biocide	2.00	1.77
BIOBAN 350 Polymer Shielded Technology	8.80	8.00
Totals	1,000.00	974.94

Paint Properties	20%
Volume Solids	20%
Weight Solids	22%
Density	1.03
pH	~8.1
Coalescent (based on polymer solids)	9.0%

Viscosities	
Krebs Stormer (KU)	69-73
ICI Cone & Plate (Poise)	0.35-0.45
Brookfield (spindle 4 / 60 rpm) (mPa.s)	1750-1950

Exterior House Paint Formulation

Based on PRIMAL™ AC-2337 Pure Acrylic Emulsion Polymer (PVC 23%)

EHP-2337-23-01

Material Name	Kilograms	Liters	PVC
Grind			
Water	71.87	71.87	
OROTAN™ 731A ER Dispersant	9.41	8.46	
Dow Corning® 108F Additive	1.00	1.00	
Kronos 2360 Titanium pigment	197.38	49.35	18.0%
Finntalc M15 Extender	37.96	13.47	5.0%
<i>Grind Sub-total</i>	317.62	144.15	
Let Down			
PRIMAL™ AC-2337 Acrylic Emulsion	535.92	497.74	
UCAR™ Filmer IBT Coalescent Solvent	21.95	23.08	
Dow Corning® 108F Additive	1.00	1.00	
ACRYSOL™ RM-2020E Rheology Modifier	21.2	20.42	
ACRYSOL™ RM-845 Rheology Modifier	2.33	2.24	
Water	90.88	90.88	
ROCIMA MB2X Biocide	1.60	1.42	
BIOBAN 350 Polymer Shielded Technology	7.50	6.82	
Totals	1,000.0	787.75	23.0%

Paint Properties

Volume Solids	35%
Weight Solids	47.8%
Density	1.269
pH	~8.7
Dispersant (active based on total powders)	1.0%
Coalescent (based on polymer solids)	9.0%

Viscosities

Krebs Stormer (KU)	118-122
ICI Cone and Plate (Poise)	1.6-1.8
Brookfield (spindle 4 / 60 rpm) (mPa.s)	8500 – 9500
Brookfield (spindle 4 / 6 rpm) (mPa.s)	17500 - 20000

Film Properties

Gloss 60°/ 85°:	36 / 62
-----------------	---------

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

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.

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

Chemical Registration

Many countries within EMEA1 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 EMEA1 Product Line

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

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

For more information visit us on www.dow.com

To contact us, call:
Europe, Middle East, Africa & India:
+31 115 672 626

Notice: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

