PRIMAL™ CM-219EF Styrene Acrylic Emulsion

Universal Styrene Acrylic Binder

Regional Product Availability

EMEA

Product Description

PRIMAL™ CM-219EF Styrene Acrylic Emulsion is an industry reference multipurpose styrene acrylic binder; supplied at 50% solids content for the formulation of interior and exterior emulsion paints, primers, undercoats, putties, etc. to be applied on mineral substrates such as masonry, plasters, fibre cement and concrete.

Characteristics of the product

- Manufactured without the use of APEO surfactants*
- Excellent binding properties and pigment loading acceptance
- Very good adhesion on mineral substrates
- Good exterior durability
- Excellent water and alkali resistance
- Good efflorescence resistance
- Good Dirt Pick Up resistance
- Versatility for broad formulating latitude
- Easy to handle and formulate

* Because we do not analyze the product for trace levels of components that may be introduced from raw materials DOW cannot guarantee the absence of these substances.

Typical Properties

These are typical properties, not to be construed as specifications

Property	Typical Values
Appearance	Milky white liquid
Solids content	49.5 – 50.5%
pH	8.5 – 9.5
Brookfield LV Viscosity (spindle 3,60 rpm)	< 500 mPa.s
Minimum Film Formation Temperature	~ 19°C
Specific Gravity (wet polymer)	1.06 g/cm^3
Specific Gravity (dry polymer)	1.12 g/cm^3

Formulation Guidelines

PRIMAL™ CM-219EF Styrene Acrylic Emulsion demonstrates wide formulation latitude from gloss through semi-gloss to matt paints which are suitable for both interior and exterior applications. The hardness level of this binder makes PRIMAL™ CM-219EF Styrene Acrylic Emulsion suitable for miscellaneous applications such as interior undercoats and wall paints making it a truly general purpose or "universal" binder for paint companies wishing to minimize the number of raw materials.

Dispersants
PRIMAL™ CM-219EF Styrene Acrylic Emulsion is greatly designed to be used with OROTAN™ 731A-ER Pigment Dispersant at 0.8% to 1% active ingredient level based on pigment and extenders.

Defoamers
PRIMAL™ CM-219EF Styrene Acrylic Emulsion is suitable for use with a wide range of standard de-foamers, such as Foamaster NXZ or Byk-024.

Rheology Modifiers and Thickeners
ACRYSOL™ RM-8W, ACRYSOL™ RM-2020, ACRYSOL™ RM-5000 and ACRYSOL™ SCT-275 Rheology Modifiers are recommended to be used in paints formulated on PRIMAL™ CM-219EF Styrene Acrylic Emulsion. The level of associative thickener needs to be adjusted carefully to ensure the best balance of properties. Low levels may give lapping problems over hydrophilic substrates, whereas high levels may lead to poor block resistance and recoat properties.

CELLOCIZE™ QP Thickener grades have also showed very positive results and is used as conventual thickener.

Coalescents
Water immiscible coalescents such as UCAR™ Filmer IBT or DOWANOLS™ Glycol Ethers are recommended to ensure good film formation during drying.

Extenders and Opaque Polymer
Standard extenders can be used in paints formulated with PRIMAL™ CM-219EF Styrene Acrylic Emulsion. Calcium carbonates like Durcal 10 or Durcal 2 showed to be suitable to formulate high quality paints. Hard extenders like Minex S 30 or lamellar type like Mica have shown to contribute to very good exterior durability.

Opacifiers such as ROPAQUE™ Ultra E and ROPAQUE™ EcoPlus show excellent results when used in satin to matt formulations based on PRIMAL™ CM-219EF Styrene Acrylic Emulsion. Additionally, the use of ROPAQUE™ Ultra E and ROPAQUE™ EcoPlus in exterior coatings is recommended to further improve dirt pick up and algae and mould resistance.

Biocides
PRIMAL™CM-219EF Acrylic Emulsion is preserved with BIT (1, 2-Benzisothiazolin-3-one). Although standard in can preservatives could be used in paint formulations, it is recommended to always test them for compatibility and efficacy.

ROCIMA 535 or ROCIMA 562 Biocide is recommended as in-can preservative. It is recommended to use ROCIMA 350 to ensure longer algae and mould resistance.

Storage and handling
As a general rule, emulsions should always be stored at temperatures above 5°C and below 30°C. Most polymer emulsions cannot tolerate repeated freezing and thawing. Primarily, we recommend vertical tanks constructed from thin walled, reinforced stainless steel. Store packed products in tightly closed original containers.

See the MSDS for additional details.

Interior /Exterior High Quality Matt Formulation
Based on PRIMAL™ CM-219EF Styrene Acrylic Emulsion (PVC 70%)
M-219EF-70-01

Material Name	Kilograms
Grind	
Water	135.0
OROTAN™ 731 A-ER (25%) Pigment Dispersant	16.2
Foamaster NXZ defoamer	1.3
CELLOSIZE™ QP100MH HEC	3.0
Aqueous Ammonia (28% in water)	1.3
Tioxide TR95	139.0
Ducal 5	117.0
Calibrite SL	195.0
Finntalc M15	55.0
Grind Sub total	662.8
Let Down	
PRIMAL™ CM-219EF Styrene Acrylic Emulsion (50%)	187.0
Ropaque™ EcoPlus Opacifier (30%)	63.0
Texanol	17.5
Kathon LXE Biocide (1.5%)	0.7
Acrysol™ TT-935 ER Rhology Modifier (30%)	3.9
Water	65.1
Totals	**1000.0**

Paint Properties	
Volume Solids:	45%
Weight Solids:	63%
PVC:	70%
Density:	1.530
pH:	~8.5

Raw Materials	Suppliers
Foamaster NXZ	BASF
Tioxide TR92	Hunstman
Durcal 5	Omya
Calibrite SL	Omya
Finntalc M15	Omya
Texanol	Eastman Chamicals

Interior Matt Formulation
Based on PRIMAL™ CM-219EF Styrene Acrylic Emulsion (PVC 83%)
M-219EF-83-01

Material Name	Kilograms
Grind	
Water	250.0
OROTAN™ 731 A-ER (25%) Pigment Dispersant	18.5
Foamaster NXZ	1.9
CELLOSIZE™ QP100MH HEC	5.5
Aqueous Ammonia (28% in water)	1.3
Tioxide TR95	50.0
Ducal 5	528.0
Grind Sub total	*855.2*
Let Down	
PRIMAL™ CM-219EF Styrene Acrylic Emulsion (50%)	92.0
Water	15.0
Texanol	17.5
Kathon LXE Biocide (1.5%)	0.6
Water	26.9
Totals	**1000.0**

Paint Properties	
Volume Solids:	41%
Weight Solids:	64%
PVC:	83%
Density:	1.610
pH:	~8.5

Raw Materials	Suppliers
Foamaster NXZ	BASF
Tioxide TR92	Hunstman
Durcal 5	Omya
Calibrite SL	Omya
Finntalc M15	Omya
Texanol	Eastman Chamicals

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. Product not to be stored under direct sunlight.

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 or national regulations. Contact your Dow Coating Materials Technical Representative for more information.

Chemical Registration

Many countries within EMEAI 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 EMEAI Product Line

Product availability and grades vary throughout the countries in the EMEAI 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.

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