



AVANSE™ ST-410 Acrylic Emulsion

Environmentally-advanced Technology for Semitransparent Deck and Siding Stains
For Industrial Coating Applications

Regional Product Availability

- North America

Description

AVANSE Technology, The Dow Company's most advanced acrylic technology platform is the foundation of AVANSE ST-410 Acrylic Emulsion. This new high-performance, 100% acrylic, waterborne polymer can be formulated to meet the toughest VOC standards and still outperform traditional solvent and waterborne semitransparent stain technologies. Semitransparent stains based on AVANSE ST-410 Acrylic Emulsion do not require coalescent or heavy metal driers, they are easy to apply, and they enhance the appearance of new and weathered wood with a long-lasting finish. In addition, the combination of morphology and unique particle stabilization maximizes the flow and lapping characteristics during application, while building early resistance properties upon drying.

Features and Benefits of Aqueous Semitransparent Stains based on AVANSE™ ST-410 Acrylic Emulsion

AVANSE Technology–High-performance 100% acrylic waterborne emulsion

- Excellent initial appearance–crisp colors that bring out the natural warmth of the wood
- Outstanding adhesion
- Superior color retention
- Durable longer lasting coating

Environmentally Advanced

- Replaces traditional solvent based technologies
- Does not require coalescent
- No heavy metal driers
- APEO free

Unique particle stabilization

- Excellent flow and wetting
- Very good lapping
- Rapid hardness development – even over high tannin woods
- Excellent early water resistance

Typical Physical Properties

(These properties are typical but do not constitute specifications).	
Appearance	Milky-white liquid
Solids content	37%
Brookfield Viscosity (#2 spindle, 60 rpm)	1000 cP max
pH	8.5–9.5
Density	8.69 lb/US gallon
Density of dry solids	9.34 lb/US gallon
Minimum Film-forming Temperature	<3°C

Performance Advantages

Application Properties

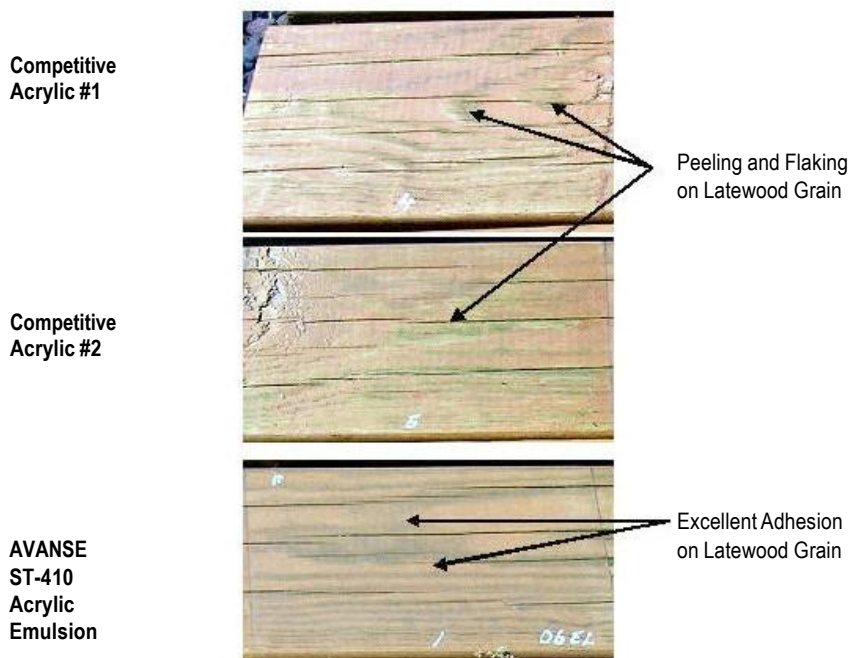
AVANSE™ ST-410 Acrylic Emulsion is a 100% acrylic emulsion developed specifically for low VOC exterior semitransparent wood stains. The unique polymer stabilization in AVANSE ST-410 Acrylic Emulsion helps to extend the workability of this polymer as it dries, giving good flow and lapping on porous surfaces.

Adhesion to Metal Based CCA Replacement Wood Preservatives

The unique interaction of the AVANSE ST-410 Acrylic Emulsion with metals also gives excellent adhesion on new wood treated with copper metal based wood preservatives.

Adhesion to Copper Azole Treated Pine

Exposed 6 Months at Horizontal Up



AVANSE™ ST-410 Acrylic Emulsion has better adhesion to copper based wood preservatives than competitive acrylic stain binders.

Early Water Resistance and Hardness Development

Stains based on AVANSE ST-410 Acrylic Emulsion have very good early water resistance and hardness development on decking substrates. Especially on high tannin woods like cedar or redwood, the early water resistance and hardness is much better than water dispersible alkyds or alkyd acrylic hybrids. Tannins from these woods can slow the oxidative cure of these systems, giving a tacky, water sensitive film after an overnight dry.

Early Wet Abrasion Resistance on Cedar

16 Hours Dry, 16 Hours Exposure in Fog Box

AVANSE™ ST-410 Acrylic Emulsion

One Coat Two Coats



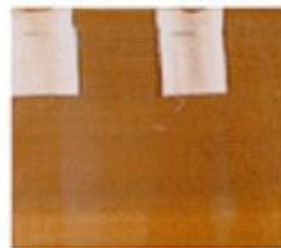
Alkyd Acrylic Hybrid

One Coat Two Coats



Water based Solvent Alkyd

One Coat Two Coats



AVANSE ST-410 Acrylic Emulsion has excellent wet abrasion resistance in one or two coats after an overnight dry. It is better than an alkyd/acrylic semitransparent stain and a solvent based semitransparent stain on cedar.

Exterior Durability

The 100% acrylic backbone in AVANSE ST-410 Acrylic Emulsion gives excellent exterior durability. Properly formulated AVANSE ST-410 Acrylic Emulsion stains protect the wood and provide a long service life. Exposure studies have shown that stains based on AVANSE ST-410 Acrylic Emulsion have exterior durability equal to or better than commercial solvent or water based semitransparent stains. The picture below shows the excellent fade resistance and adhesion of the AVANSE™ ST-410 Acrylic Emulsion compared to commercial semitransparent stains.

30 Month Exterior Durability

Exposed Horizontal Up on ACQ Treated Pine

Commercial Controls

AVANSE™ ST-410 Acrylic Emulsion



AVANSE ST-410 Acrylic Emulsion has better fade resistance, adhesion and erosion resistance than the commercial semitransparent stains.

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.

CAUTION! Keep combustible and/or flammable products and their vapors away from heat, sparks, flames and other sources of ignition including static discharge. Processing or operating at temperatures near or above product flashpoint may pose a fire hazard. Use appropriate grounding and bonding techniques to manage static discharge hazards.

CAUTION! Failure to maintain proper volume level when using immersion heaters can expose tank and solution to excessive heat resulting in a possible combustion hazard, particularly when plastic tanks are used.

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. The Dow Chemical Company 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.

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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