



OPULYN™ 301 Opacifier

Hair care, skin care

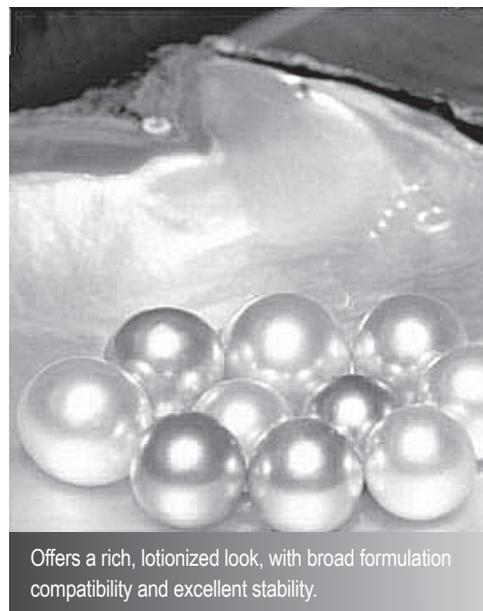
Description

- Anionic styrene/acrylic copolymer supplied at 40% solids
- pH: 2.1 to 2.5
- Particle size: 0.18 microns
- Preservative: none, self-preserved

These are typical properties, not to be construed as specifications.

Advantages

- Offers uniform opacity and lotionized appearance to formulations
- Effectively helps hide amber cast or haziness in formulations
- Offers high whiteness or a pastel color effect to formulation when used with dyes
- Excellent compatibility allows for use in a wide variety of applications
- Effective at low use levels
- Easy-to-use liquid



Applications

OPULYN™ 301 Opacifier is a highly versatile opacifier for anionic surfactant-based systems. An excellent choice for formulations with slightly acid to moderate pH range, containing up to moderate levels of inorganic electrolytes, such as,

- Mild shower gels and shampoos
- Fatty-acid based liquid hand soaps

Use Levels

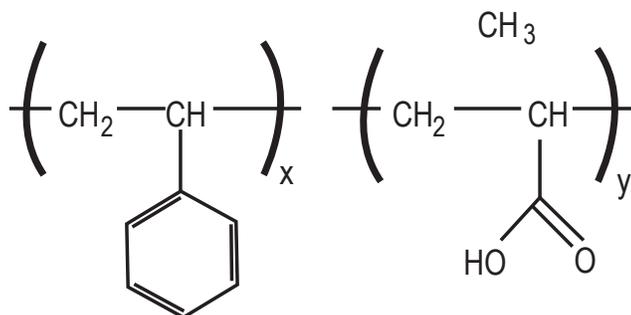
- 0.5% to 1.0%, as supplied depending on desired appearance of final product

INCI Name: Styrene/Acrylates Copolymer

Technology

Styrene acrylate emulsion that modifies the appearance of formulations through efficient light scattering.

Structure



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OPULYN™ 301 Opacifier

Formulation components, ionicity and pH should be chosen for optimal formulation stability.

Order of Addition

For maximum results, it is recommended that OPULYN™ opacifiers are diluted with product water (held out of the formulation) added slowly as the final component to the formulation (after pH adjustments, addition of dye, salt, perfume, etc.). Good agitation should be maintained throughout the addition process. If pre-dilution is not possible or desired, OPULYN opacifiers can also be added directly to formulation slowly and with good agitation. If desired, OPULYN opacifiers can also be added directly after the formulation initial water charge.

Neutralization

Due to low dosage rates, the low pH of OPULYN™ 301 Opacifier should not affect the pH of the final formulation. Note: if tap water is used to pre-dilute, the pH will automatically increase to pH 4-5 and neutralization may not be required.

Compatibility

There are several formulation parameters that can affect the stability of an opacified formulation, such as level of electrolytes and cationic ingredients, the pH and choice of surfactants. All of the OPULYN opacifiers behave differently in these systems. OPULYN™ 301 Opacifier has the broadest compatibility across a variety of applications. OPULYN™ 302B is an excellent choice for formulations with soft preservatives due to its compatibility in the lower pH range. OPULYN™ 303B has a very good compatibility with cationic-based systems with low levels of anionic surfactants. Its unique design is responsible for those specific properties and makes it an excellent choice for cationic-based hair conditioners. In addition, OPULYN™ 303B offers, in cleansing products, a good compatibility in the presence of high levels of inorganic electrolytes and very low amounts or in the absence of amphoteric surfactants. OPULYN™ 305 offers a very good compatibility in the presence of high levels of inorganic electrolytes. Its unique structure is responsible for those properties and makes it an excellent choice for liquid hand soaps. Both OPULYN™ 303B and OPULYN™ 305 offer a very good compatibility in the presence of high levels of inorganic electrolytes. In addition, OPULYN 303B also has very good compatibility with cationic-based systems with low levels of anionic surfactants. OPULYN™ 302B is an excellent choice for formulations with soft preservatives due to its compatibility in the lower pH range.

Evaluating Formulation Stability

Four week stability tests under high, low, and room temperature conditions as well as 3 cycles of freeze/thaw stability are recommended as a best practice for any formulation containing opacifiers.

Overcoming Depletion Flocculation

Flocculation and sedimentation are the two most common symptoms of formulation instability. Certain conditions such as high betaine levels, high electrolyte levels, or the presence of cationic ingredients can pose additional stability challenges in a formulation. For these specific conditions, ACULYN™ 28 or ACULYN™ 88 rheology modifiers are an excellent choice as a primary or secondary thickening agent. Their high efficiency and excellent suspension performance will both build viscosity and help to prevent flocculation or sedimentation.

Cleaning

After use, process equipment should be cleaned with high pressure washing or an appropriate cleaning solution.

Safety

For product safety, refer to the Safety Data Sheet (SDS)

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, 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 Technical Representative for more information.

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 (SDS), should be consulted prior to use of Dow products. Current Safety Data Sheets are available from Dow.

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