NEW MULTIFUNCTIONAL LIQUID POLYMER FOR HIGH PERFORMANCE SKIN CARE SYSTEMS

Moisturization, repair, and protection are the three key focuses of skin care products. Unfortunately, the active components helping in achieving these claims are often high electrolyte-containing ingredients. These electrolytes diminish formulation stability and aesthetics.

Enhanced efficacy together with an appealing sensorial experience is what consumers’ desire in their skin care regimen. Now, a new liquid multifunctional polymer, Novemer™ EC-2 polymer, allows you to deliver efficacious electrolyte-laden products with elegant sensory properties ranging from low viscosity lotions to high viscosity creams.

KEY FEATURES AND BENEFITS

- Multi-functional: Effectively stabilizes emulsions providing excellent thickening and suspension properties
- High efficiency in the presence of challenging electrolytes and actives
- Functions as a primary emulsifier
- Synergistic thickening and electrolyte compatibility with Carbopol® polymers
- Delivers an elegant sensory
- Easy-to-use liquid pre-neutralized polymer
- Excellent shear stability
- Simple and versatile addition at any stage
- Hot or cold processing
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- Hot or cold processing
- Polyester Ester
- Inverse Emulsions
- Base
- Ester
- Water
- Novelty
- Electrolyte Tolerance at pH 5.5 - 6.5

Novemer™ EC-2 polymer can be used in formulations where electrolytes are the preferred claims driving ingredients as it has demonstrated superior performance with mono- (Figure 3) and multi-valent electrolytes. Novemer™ EC-2 polymer still shows good performances in low electrolyte-containing systems; however, the addition of a Carbopol® polymer or a co-emulsifier is recommended to further enhance viscosity, electrolyte resistance, and aesthetics in the presence of high levels of electrolytes.

A demonstrational emulsion prepared with 5 wt% Novemer™ EC-2 polymer at pH 5.5 shows enhanced viscosity and stability in presence of high levels of sodium chloride.

FIGURE 3: Viscosity as a Function of Sodium Chloride and Magnesium Ascorbyl Phosphate Addition

ELECTROLYTE TOLERANCE IN SUN CARE APPLICATIONS

Novemer™ EC-2 polymer allows you to develop sunscreen formulations containing the water-soluble, electrolyte, UVB filter. While Novemer™ EC-2 polymer is capable of stabilizing maximum use levels of PBSA by itself, combining it with Carbopol® Ultrace 20 polymer enables formulation of more viscous emulsions. Demonstrational emulsions prepared with Novemer™ EC-2 polymer (1 wt% polymer solids) and Schercemol® CO solution (10 wt%) at a pH 7 demonstrate this concept.

FIGURE 4: Increased Electrolyte Tolerance with Carbopol® Ultrace 20 Polymer

UNIQUE SENSORY ATTRIBUTES

Sensory evaluations were performed to compare rub-out and afterfeel characteristics of Novemer™ EC-2 polymer to two inverse emulsions polymers. Tained panels ranked products in order of magnitude for individual attributes using a scale of 1 (lowest) to 3 (highest). Friedman’s analysis of variance was used to determine statistical differences.

Attribute shown in all CAPS are significant at ≥ 95% confidence. The closer a point is to the center of the plot, the less it demonstrates that specific property.

FIGURE 5: Results of Sensory Evaluation

With NEW Novemer™ EC-2 polymer now you can deliver new and innovative products with elegant sensory properties with a single polymer.

For product details, more information, samples and starting formulations visit www.lubrizol.com/personalcare