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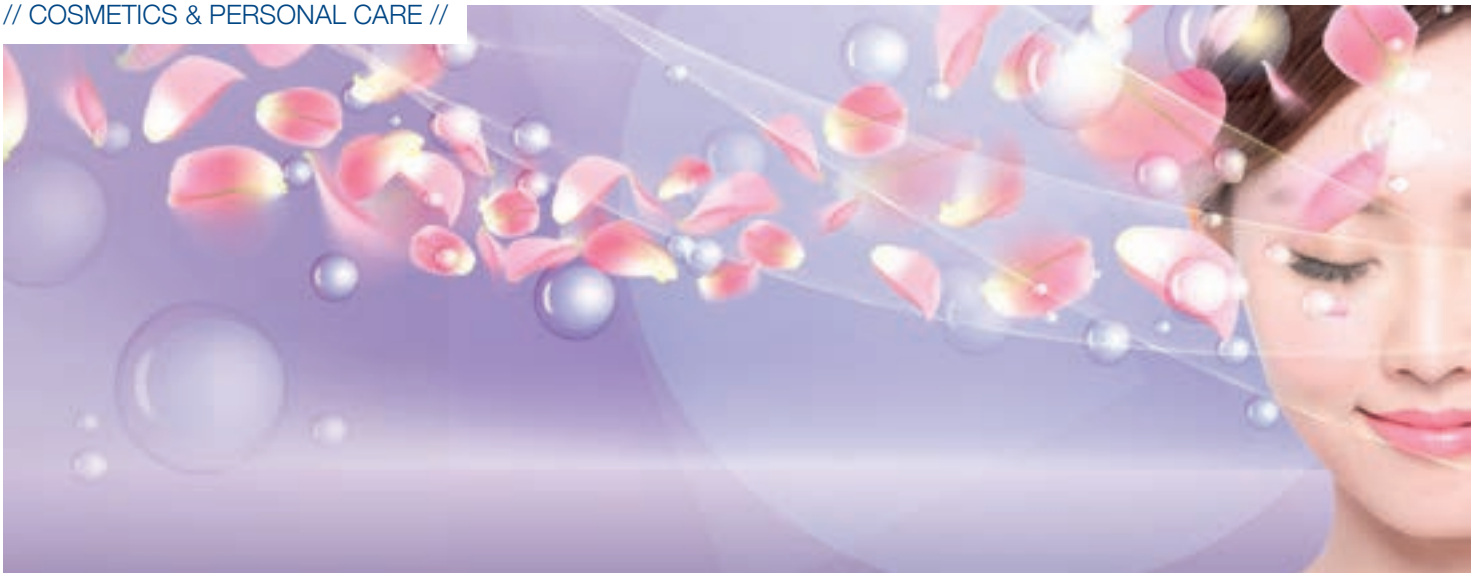
// COSMETICS & PERSONAL CARE //



// VISCOLAM® CL5, FOR CLEAR LOW pH FORMULATIONS //

Consumers' perception regarding traditional preservatives and increasing regulation has led towards a diffuse use of natural preservatives, especially of organic acids. Following this trend, pH of formulations is shifting from neutral to acidic conditions.
At the same time, personal cleansing formulations have become more and more sophisticated and consumers are not willing to compromise on formulas' aesthetics: an outstanding sensorial experience is of utter importance. Now more than ever, the personal care industry requires highly functional and easy-to-use ingredients to deliver exceptional benefits.
Properties such as skin moisturization, exfoliation, nourishment or actives' release can be delivered through the suspension of petals, beads, microcapsules and scrubbing agents. The market offers plenty of rheology modifiers able to thicken and stabilize traditional formulations at neutral pH, but they fail in guaranteeing clarity and suspension at lower pH, condition required for natural preservatives to be effective. Thus, acidic formulas can be extremely challenging and formulators need to find alternative solutions to achieve all these properties at once.

VISCOLAM® CL5 inspires formulators creativity, enhancing customers' sensorial experience and allowing the display of suspended eye-catching insoluble ingredients. It responds to the rheological needs of today's toiletries formulations, overcoming technical hurdles of traditional rheology modifiers and working in synergy with surfactants, providing elegant flow, superior suspension and excellent clarity at skin physiological pH. It is a preservative-free ingredient and it is ideal for formulas protected with food-grade preservatives, such as sodium benzoate. Designed to provide clarity and suspension in the 3.5 to 6 pH range, VISCOLAM® CL5 is ideal for clear low pH formulas, anti-acne facial cleansers with salicylic acid or feminine hygiene detergents.

Summary of benefits

- Superior clarity and suspending properties for cleansing formulations at pH 3.5-6
- Outstanding performance even in presence of natural preservatives, salts and cationic conditioning polymers
- Broad surfactant compatibility: traditional, as well as mild and SLES-free formulas
- Extremely easy to use, being a low viscosity aqueous dispersion that can deliver clarity, suspension and thickening in a one-step neutralization process

VISCOLAM® CL5 is a versatile ingredient, effective both in traditional and in mild SLES-free cleansing products. This acrylic polymer enhances the flow characteristics of personal care formulas and imparts a soft, non-greasy and non-tacky feel.
VISCOLAM® CL5 is also very easy to use, requiring only a one-step neutralization process. In most cases, the polymer can be completely swelled directly by surfactants' addition with no need of further use of strong bases, such as sodium hydroxide. Production times can therefore be shortened and resulting manufacturing procedures are easier.

INCI name:
Water (and) Acrylates/Laureth-25 Methacrylate Copolymer

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Compatibility with cationic ingredients

VISCOLAM® CL5 can guarantee efficient thickening, suspension properties and superior clarity even in presence of cationic ingredients.

Cationic polymers are often used in 2-in-1 shampoos, that combine effective soil removal with benefits such as improved combability, hair feel and shine. Nowadays crystal-clear shampoo formulations are becoming increasingly popular following the silicone-free marketing trend. New silicone-free 2-in-1 shampoos are studied to provide weightless conditioning to hair and clarity of the formulations helps conveying the idea of a light feel.

VISCOLAM® CL5 is compatible with the most common transparent conditioning polymers such as cationic guar, Polyquaternium-7 and Polyquaternium-10. Also in combination with these ingredients, it can deliver an elegant rheology while maintaining unaltered the transparency of the formula.

Lamcos 154 – Clear naturally preserved body wash

Phase	Ingredient name	% w/w
Phase A		
1	Aqua (Water)	To 100
2	VISCOLAM® CL5	7.50
3	Disodium EDTA	0.05
4	Glycerin	2.00
5	Sodium Laureth Sulfate (28% a.m.)	33.30
6	Cocamidopropyl Betaine (27% a.m.)	10.00
7	Sodium Benzoate	0.40
Phase B		
1	ALPICARE NS	1.00
2	Parfum (Fragrance)	0.50
Phase C		
1	Citric Acid (20% solution)	To ~pH 5
2	Jojoba Esters (beads)	0.50

Manufacturing procedure:
In the main vessel, under stirring, add ingredients A1-A7. Mix well after every addition, until a homogeneous mixture is obtained. In a support vessel, premix ingredients B1 and B2 until a clear solution is obtained. Add phase B into phase A under stirring, then adjust pH to ~5, if necessary, and add C2 with gentle mixing.

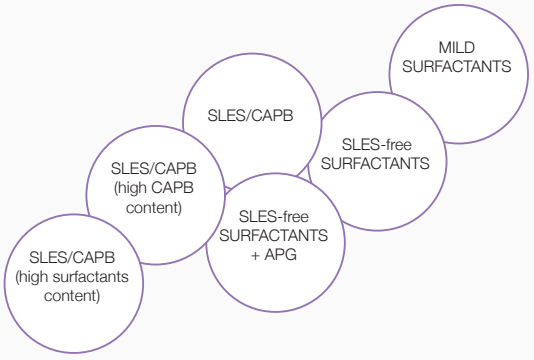
General Characteristics:
Appearance: thick clear detergent
pH: ~5
Viscosity (Brookfield, 20 rpm, 25 °C): ~6000 mPa*s

Lamcos 155 – Clear SLES-free shower gel

Phase	Ingredient name	% w/w
Phase A		
1	Aqua (Water)	To 100
2	VISCOLAM® CL5	8.00
3	Disodium EDTA	0.05
4	Glycerin	3.00
5	Ammonium Lauryl Sulfate (28% a.m.)	28.60
6	Cocamidopropyl Betaine (27% a.m.)	10.00
Phase B		
1	ALPICARE NS	1.00
2	Parfum (Fragrance)	0.50
Phase C		
1	Panthenol	1.00
2	Sodium Benzoate	0.40
3	Citric Acid (20% solution)	To ~pH 5
4	Jojoba Esters (beads)	0.50

Manufacturing procedure:
In the main vessel, under stirring, add ingredients A1-A6. Mix well after every addition, until a homogeneous mixture is obtained. In a support vessel, premix ingredients B1 and B2 until a clear solution is obtained. Add phase B into phase A under stirring, then add C1-C2 and adjust pH to ~5, if necessary. Finally add C4 with gentle mixing.

General Characteristics:
Appearance: thick clear detergent
pH: ~5
Viscosity (Brookfield, 20 rpm, 25 °C): ~6000 mPa*s



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