

Bio-based Hair Conditioning Solutions Our Sustainable Solutions

Hair is an extension of our individuality, reflecting personal style and defining our entire look. Maintaining a more natural and healthy hair style is a trend that is growing with the movement to embrace all hair types and textures at the root. Whether treating wavy, curly or straight hair, conditioning is an essential part of our personal care routine to protect, revitalize and nourish the biomaterial that helps define us.

Conscientious consumers desire more natural, simpler formulas containing ingredients and products that are eco-friendlier and more sustainable, with a lower environmental impact.

Discover our natural bioderived ingredient solutions and formulation ideas and gain inspiration for your next hair care development.

Eco-friendly bio-based cationic conditioning

Jaguar[®] Optima by Solvay

A unique naturally-derived solution for oil-based and silicone-free shampoos offering conditioning performance even in sulfate-free formulations. It offers ease of wet and dry combing, quick rinse, and rich wet feel. This product helps achieve long-lasting clean, lightweight feel and soft, shiny, healthy-looking hair.

FAST FACTS

INCI: Guar Hydroxypropyltrimonium Chloride Cosmos approved: Yes China listed: Yes

Appearance: Powder





Repair heavy damage

New generation Cationic **Jaguar® Optima** helps caring for heavily damaged hair without impacting lightness and bounce. In vivo salon half-head tests, 20 women medium long hair dyed 4-6 weeks. 2 applications. Scale: 1 very bad, 5 very good.





Eco-friendly bio-based cationic thickening

Jaguar[®] HP 120 COS

Ideal for thickening solutions containing high alcohol or glycol content. It provides an emollient effect to the skin and can be used as a general purpose viscosifier for hydroalcoholic solution, oil-in-water emulsion stabilization and foam stabilization. This product is stable over a wide pH range and is compatible with electrolytes, polar solvents, glycols and alcohols.

FAST FACTS

INCI: Hydroxypropyl Guar Appearance: Powder China listed: Yes

Eco-friendly bio-based thickening

CELLOSIZE[™] PCG-10 by Dow

Is rapidly dispersible in cold water. It is a thickener that is compatible over a wide pH range, delivering pseudoplastic rheology to end-use products. It is used in rinseoff and leave-on conditioners, conditioning shampoos and hair relaxers.

Impact of CELLOSIZE™ HEC thickeners concentration in a conditioner rinse-off formula



FAST FACTS

INCI: Hydroxyethyl Cellulose Appearance: White powder Biobased Carbon weight: 60% **Biodegradability profile:** Inherent, Primary Biodegradabilty

China listed: Yes

Bio-based polymer from Corn for styling your hair

MaizeCare[™] Style Polymer by Dow

A bio-based polymer, derived from corn that allows flexibility in hair care styling from stiff hold to subtle definition and textures from waxes to sprays. It is also non-GMO. It is an easy to use powder, the aqueous dispersion forms a natural film with comparable performances to synthetic film formers, with added benefit of being non-hydroscopic for high humidity resistance.

From a renewable resource with good environmental profile, **MaizeCare™ Style Polymer** is biodegradable, 100% vegetable origin, Non-GMO source consequently Awarded **COSMOS** by **ECOCERT**. His INCI : Hydrolyzed Corn Starch is listed in the Catalogue of Cosmetics Ingredients used in China.

FAST FACTS

INCI: Hydroxyethyl Cellulose Appearance: White powder Biobased Carbon weight: 60% Biodegradability profile: Inherent, Primary Biodegradabilty China listed: Yes







✓ MaizeCare[™] Style exhibits superior humidity resistance to PVP
✓ MaizeCare[™] Style increases curl retention as a function of polymer loading



Natural Quat-Free Conditioning

AminoSensyl™ HC by Inolex

100% natural, quat-free hair conditioning system for sustainable high performance hair care. Its ecofriendly design provides a readily biodegradable cationic system that is safe and gentle to humans and non-toxic to aquatic life.

AminoSensyl[™] HC is derived from the essential amino acid, valine, which is naturally found in hair and skin, and Brassica Napus seed oil. The preneutralized combination of Brassicyl Valinate Esylate cationic amino lipid with Brassica Alcohol forms lamellar liquid crystals for ease of formulation and enhanced performance. INOLEX's cutting edge amino lipid technology creates rich textures and deep moisturization for soft, weightless conditioning to smooth, define, and strengthen hair. AminoSensyl[™] HC contains 100% biobased content as certified by the USDA BioPreferred[®] Program, is COSMOS approved, and is approved for use in NSF/ANSI 305 certified personal care products.

FAST FACTS

INCI: Brassica Alcohol (and) Brassicyl Valinate Esylate ISO 16128: 1

Certified by the USDA BioPreferred® Program **Biodegradability profile:** Readily Biodegradable



AminoSensyl™ HC:

- Significant reduction in hair breakage from both rinse-off and leave-in conditioners
- 54% (2X) increase in hair strength in a rinse-off conditioner application
- 59% (2X) increase in hair strength in a leavein conditioner applicationAnti-Breakage Test AminoSensyl[™]

Test Method:

- Anti-Breakage Benefits via Repeated Grooming with Custom-Built Automatic Groomer
- Study performed by TRI/Princeton
- European medium brown hair tresses, bleached, 10 replicate tresses
- Test Formulation: 8% w/w AminoSensyl HC in water; pH ~4.0
- Rinse-Off Treatment procedure: (1) SLES wash, (2) 3 minute conditioner application, (3) 30s rinse
- Leave-In Treatment procedure: (1) SLES wash, (2) Conditioner application
- Tresses were dried and allowed to equilibrate at 60% RH, 22°C
- Dry tresses are groomed for 2,000 cycles. Fibers are collected and assessed every 200 cycles.



Natural Conditioning Emollient

Mackaderm[®] LIA MB by Solvay

Acts as an soft touch emollient with a high spreadability and fast absorption on the skin. It has a 100% vegetable origin and is non-toxic, non-irritating, fully biodegradable and environment friendly. Its silicone like sensorial profile and outstanding performance on dry stage makes it suitable for hair care formulations. Moreover, it provides a light, non-greasy texture to the hair as well for skin.

FAST FACTS

INCI: Isoamyl Laurate

Appearance: Colorless to slightly yellow clear liquid

ISO 16128: 1

China listed: Yes

Biodegradability profile: Readily Biodegradable



In-Vivo Tests

- Amodimethicone @ 1.5% - Mackaderm® AR-33 @ 4% - Mackaderm® LIA @ 4% Dow Corning 2-8566 Amino Fluid





Bio-based gum blend for hair serum

DOWSIL[™] PMX-1508 Fluid by Dow

A blend of an ultra high viscosity dimethiconol in C13-15 alkane a bioderived, inherently primary biodegradable carrier for use in hair care, skincare, suncare and color cosmetic applications.

Key benefits:

- Provides smoothness and slipperiness to hair
- Conditions hair
- Provides hair shine
- Helps increase natural origin content of formulations (ISO 16128)
- Heat protection
- Inherently Biodegradable Carrier

FAST FACTS

INCI: C13-15 Alkane (and)	ISO 16128: 0,76
Dimethiconol	D4, D5 & D6 <0.1%
Appearance: Clear fluid	China listed: Yes





For dry combing, measurements made with Dia Stron MTT175 with combing device show that **DOWSIL™ PMX-1508 Fluid** as all gum blends significantly decrease total combing work compared to untreated hair (up to 90% reduction).



For shine, **DOWSIL™ PMX 1508 Fluid** provides the highest level of shine. Shine is impacted by carrier volatility level as shown below. Shine measurements on Caucasian hair were done with SAMBA Hair from Bossa Nova Vision.

Comparison to XIAMETER™ PMX-1501 Fluid

BE250

BE250

Univar Solutions

Conditioning ester based on castor oil

BioEstolide 250 by Biosynthetic

A slightly heavy ester. It can be used in rinse off and leave in conditioners and hair masks for dry damaged hair and where moisturization is needed. Imparts a nice shine and helps protect the hair from thermal damage.

Look at the benefic impact of **BioEstolide 250** apply with rinse-off conditioner and after thermal treatment on fine very curly hair, average density.

FAST FACTS

Freshly shampooed hair

INCI: Acetyl Ethylhexyl Polyhydroxystearate

Appearance: Light yellow

ISO 16128: 0,86



BioEstolide 250 vs Silicone Quat Microemulsion on fine very curly hair, average density.



Blow dried hair Left/Silicone Right/BE250



Flat ironed hair Left/Silicone Right/BE250

For more information about our "Personalized bio based hair conditioner" solutions, such as sample, formulation guide line, please contact your Univar Solutions customer service representative

© 2021 Univar Solutions Inc. All rights reserved. Univar, the collaboration insignia, and other identified trademarks are the property of Univar Solutions Inc. or affiliated companies. All other trademarks not owned by Univar Solutions Inc. or affiliated companies that appear in this material are the property of their respective owners. Univar Solutions Inc. and its affiliates ("Univar") offer this suggested formulation as a representative formulation only. It is not a commercialized product. Univar relies on information and data from its suppliers on which to base this suggested formulation, but Univar has not subjected the suggested formulation to any testing for performance, efficacy or safety. Univar makes no warranties, express or implied, related to this suggested formulation, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Additionally, Univar has not done any patent search on the suggested formulation. BECREMARKANTES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Additionally, Univar has not done any patent search on the suggested formulation. BECREMARKANTES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Additionally, Univar has not done any patent search on the suggested formulation. BECREMARKANTES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Additionally, Univar has not done any patent search on the suggested formulation. BECREMARKANTES OF DESCHARKANCE, FFICACY AND SAFETY, FURTHERMORE, IT IS YOUR RESPONSIBILITY TO OBTAIN ANY NECESSARY GOVERNMENT CLEARANCE, LICENSE OR REGISTRATION. BY TAKING THIS SUGGESTED FORMULATION, YOU HEREBY AGREE TO DEFEND AND HOLD UNIVAR HARMLESS FROM ANY CLAIM OF INTELLECTUAL PROPERTY INFRINCEMENT. Any suggested uses are not inducements to infringe any patent and should not be taken as such. 000013226 - 2021