

Crodazoquat MCC

Acondicionador catiónico para cabello · Croda

DOCUMENTACIÓN TÉCNICA

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LTSH S.A. de C.V.

ltsh.com.mx · info@ltsh.com.mx



Crodazoquat™ MCC

Behentrimonium Methosulfate (and) Quaternium-87 (and) Cetearyl Alcohol

MultiCultural Conditioner for Damaged Hair

Crodazoquat MCC utilises a hybrid technology that has been optimised to provide excellent conditioning on a broad range of hair types, including hair of Caucasian, Brazilian, African and Asian origin. Hair from different ethnicities has distinct conditioning needs, based on the differences observed in morphological characteristics. This is especially true when hair has been damaged. **Crodazoquat MCC** is a highly efficient conditioner that restores hydrophobicity and delivers consumer-perceivable feel improvement. Found to be especially effective on damaged hair, **Crodazoquat MCC** addresses important market needs for an increasingly diverse global population seeking treatment for damaged hair. Accordingly, **Crodazoquat MCC** has broad global regulatory acceptance facilitating use in various geographic regions.

Benefits

- Enables conditioning on various ethnic hair types
- Especially effective on damaged hair
- Restores hydrophobicity
- Enhances hair aesthetics
- Detangles
- Conditions
- Consumer perceivable feel improvement

Features

- 70% cationic activity
- 81.6% Naturally-derived
- No Volatile Organic Compounds (VOCs)
- No glycols
- Pastillated for ease of use
- EINECS, REACH, and DSL compliant
- IECIC and IECSC-listed

Applications

- Leave-on and rinse-off conditioners
- Treatments for damaged hair
- Multicultural hair care products, including those targeted to Caucasian, Brazilian, African and Asian hair

Consumers around the world damage their hair through use of thermal styling tools, by chemical processing, or by colouring their hair. Restoring hair to a healthy state is consequently a primary consumer need. Globally, 41% of new conditioner and treatment products launched in 2014 have used claims for damaged hair¹. From a population growth perspective, non-Caucasian population groups are projected to grow at a faster rate as compared to the Caucasian population through 2018². Hispanic and Asian populations are expected to be the fastest growing groups and are also significantly heavier users of hair colouring products as compared to the Caucasian population².

* **Crodazoquat MCC** and its use in personal care applications are covered under US Patents 6,838,419 and 6,953,773

Structure and Composition

Crodazoquat MCC is composed of behentrimonium methosulfate, quaternium-87, and cetearyl alcohol in a ratio that has been optimised for maximum performance.

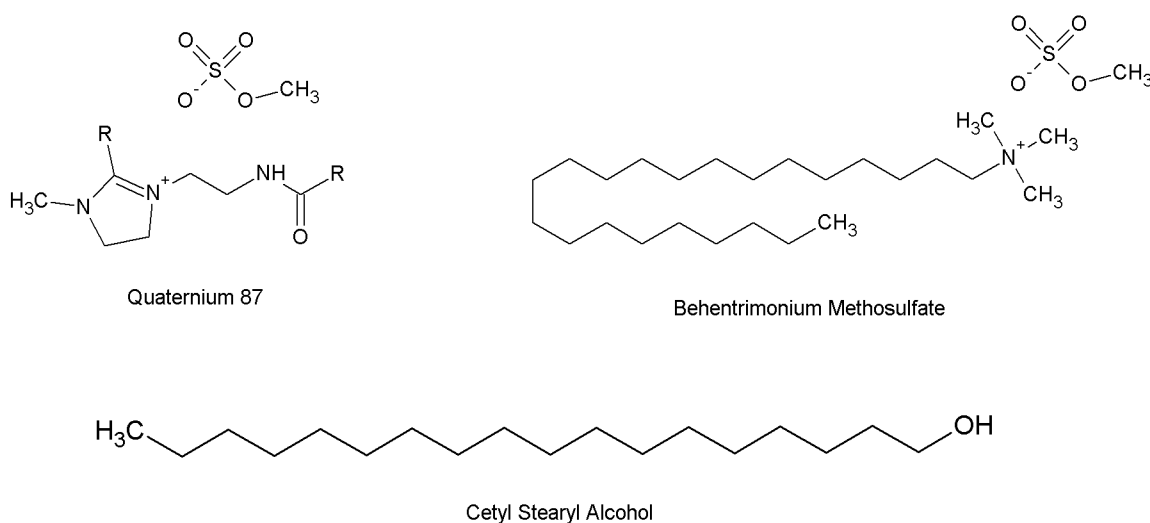


Figure 1: Chemical structure of Crodazoquat MCC

The high cationic activity of **Crodazoquat MCC** is achieved without the use of synthetic glycol or volatile organic compounds. As a result, the naturally-derived content of **Crodazoquat MCC** is 81.6%. Additionally, the product is pastillated for ease of use, versus the paste form in which some quaternium products are supplied. **Crodazoquat MCC** has a more favourable composition than other quaternary surfactants, as it has high cationic activity yet contains no VOCs or glycols (Figure 2).

	Cationic Activity Level	VOC-Free (Synthetic)	Glycol-Free (Synthetic)	Fatty Alcohol (Natural)
Behentrimonium Methosulfate	25%	✓	✓	✓
	50%	✓	✗	✓
	80%	✗	✓	✗
Behentrimonium Chloride	25%	✓	✓	✓
	70%	✓	✗	✓
	80%	✗	✓	✗
Crodazoquat MCC	70%	✓	✓	✓

Figure 2: Composition comparison of conditioning quaternary industry benchmarks

PERFORMANCE DATA

Crodazoquat MCC was evaluated in a series of in-house performance studies to measure its ability to condition, detangle, improve hydrophobicity, and increase shine across hair types of various origins. In addition, tress tests and salon studies were conducted to assess wet and dry aesthetics. The results of these studies demonstrate the excellent conditioning performance of **Crodazoquat MCC**.

Improved Hydrophobicity

Healthy, undamaged hair is hydrophobic (water repelling). Hair becomes more hydrophilic (water loving) when damaged through chemical, mechanical, or environmental sources. If hair can be restored to a more hydrophobic state, it can be considered to be healthier.

The dynamic advancing contact angle is a measurement used to determine the hydrophobicity of hair. If this measurement increases, it can be concluded that hydrophobicity has increased and hair has become healthier. In this study, the dynamic advancing contact angles of hair fibres of four different ethnic origins were measured before and after treatment with 1.5% active **Crodazoquat MCC** in a conditioner. The average dynamic advancing contact angle before and after treatment is represented in Figure 3.

Crodazoquat MCC Increases Hydrophobicity

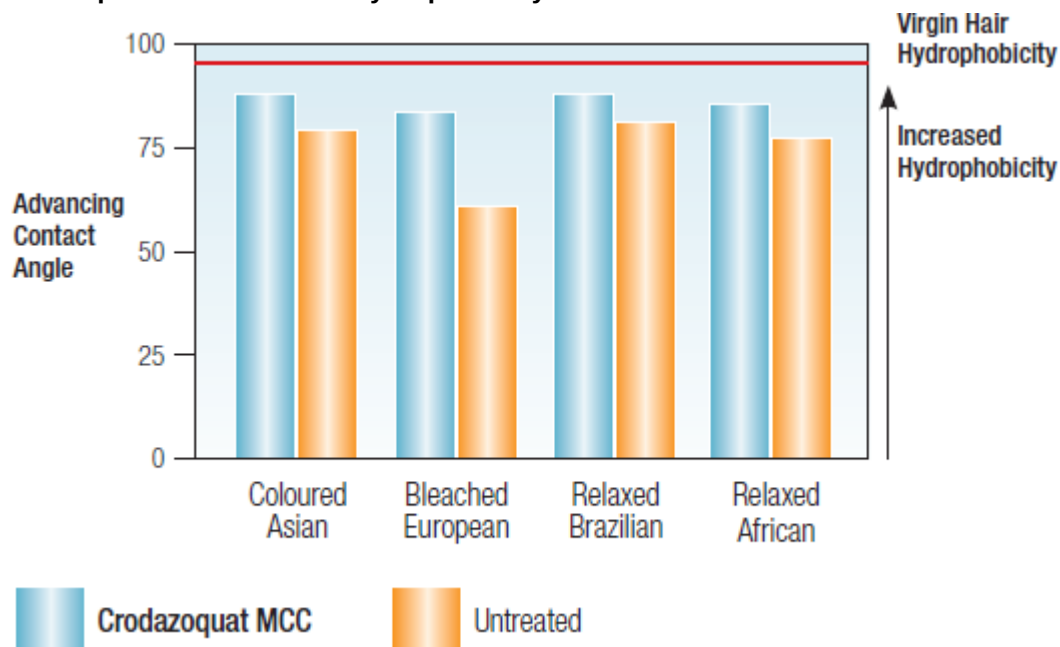


Figure 3: Increases in average advancing contact angle indicate hair has become more hydrophobic with Crodazoquat MCC, restoring hair to a healthier state

An increase in the average advancing dynamic contact angle was observed on coloured Asian hair, bleached Caucasian hair, relaxed Brazilian hair and relaxed African hair. From these results, it can be concluded that **Crodazoquat MCC** has improved the surface hydrophobicity of

hair that had been damaged by the colouring, bleaching, or relaxing process resulting in hair that has been restored to a healthier state.

Excellent Detangling and Conditioning

To assess the detangling and conditioning capability of **Crodazoquat MCC**, the wet and dry combing forces on coloured Asian, bleached Caucasian, and relaxed Brazilian hair were measured. A reduction in the combing force required to move a comb through a wet or dry hair tress indicates how well a product is conditioning and detangling the hair. A 1.5% active **Crodazoquat MCC** conditioner was compared to 1.5% active Behentrimonium Methosulfate (BTMS) and Behentrimonium Chloride (BTMC) conditioners.

The wet and dry combing study results reveal excellent detangling and conditioning from **Crodazoquat MCC**, measured by up to a 95% reduction in combing force on coloured Asian, bleached Caucasian and relaxed Brazilian hair.

Crodazoquat MCC Provides Excellent Detangling and Conditioning on Various Hair Types

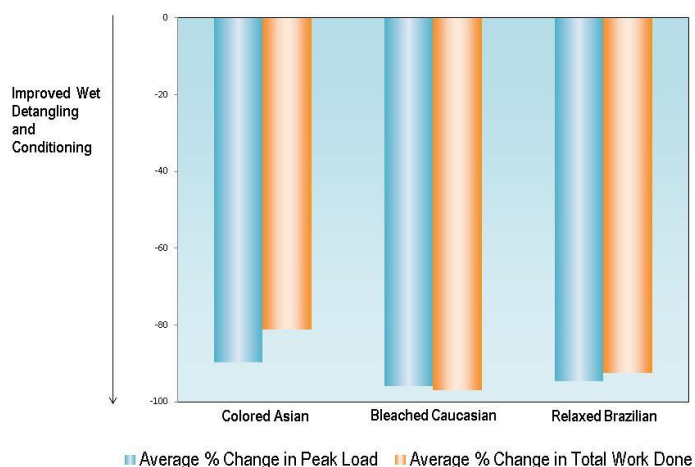


Figure 4: Dramatic reduction in wet combing forces indicated excellent wet detangling and conditioning performance of Crodazoquat MCC

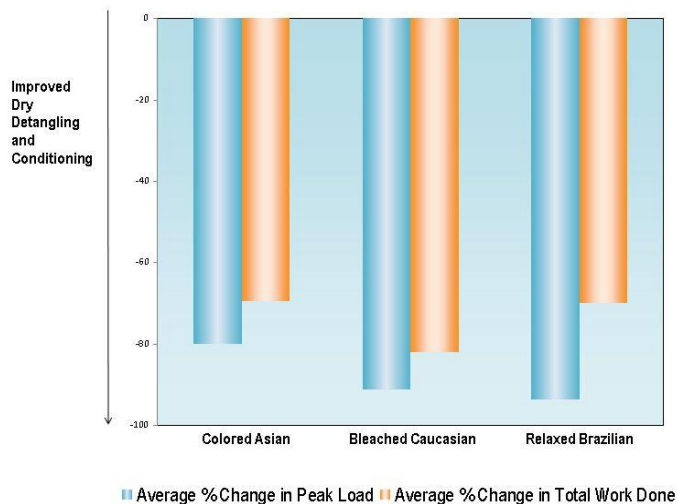


Figure 5: Dramatic reduction in dry combing forces indicated excellent dry detangling and conditioning performance of Crodazoquat MCC

Crodazoquat MCC detangling and conditioning performance was compared to the high industry conditioning benchmarks of BTMS and BTMC. The excellent detangling and conditioning performance of **Crodazoquat MCC** (depicted in Figures 4 and 5) was on par with the conditioning performance of BTMS and BTMC on bleached Caucasian and relaxed Brazilian hair. On coloured Asian hair, **Crodazoquat MCC** outperformed BTMS and BTMC for detangling and conditioning (Figure 6).

Crodazoquat MCC Improves Detangling and Conditioning on Coloured Asian Hair vs. Industry Benchmarks

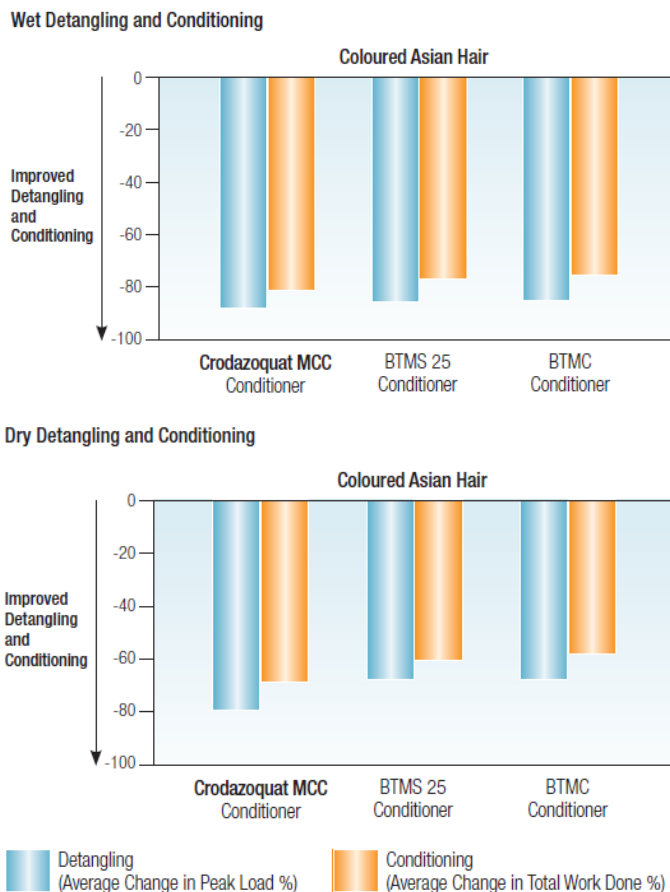


Figure 6: Crodazoquat MCC wet and dry detangling and conditioning results outperform BTMS and BTMC on coloured Asian hair

Enhanced Shine

Consumers often associate shiny hair with healthy hair. Accordingly, hair shine is a desired consumer attribute, particularly when the hair has been damaged. **Crodazoquat MCC** was found to increase hair shine on coloured Asian and relaxed Brazilian hair.

The measurement of shine on the surface of hair is complex. Croda adapted a methodology to measure shine on the hair's surface that utilises the Hair Shine Imaging System (SAMBA) equipment from Bossa Nova Technologies³. This methodology determines the apparent cuticle angle calculated from angle differences obtained from root to tip and tip to root measurements. The smaller the angle differences, the lower the apparent cuticle angle and the smoother the hair's surface. The smoother the hair's surface, the stronger the reflected light intensity and the better the shine or lustre. The SAMBA hair imaging system allows calculation of the Lustre (L) index of the hair.

Coloured Asian and relaxed Brazilian hair tresses were treated with **Crodazoquat MCC** and analysed to evaluate shine utilising the SAMBA. Results reveal that **Crodazoquat MCC** enhances shine on both hair types, especially on relaxed Brazilian hair. Coloured Asian hair lustre increased by 10.5% while relaxed Brazilian hair lustre increased by 75.4%.

Crodazoquat MCC Shine Increase on Coloured Asian Hair

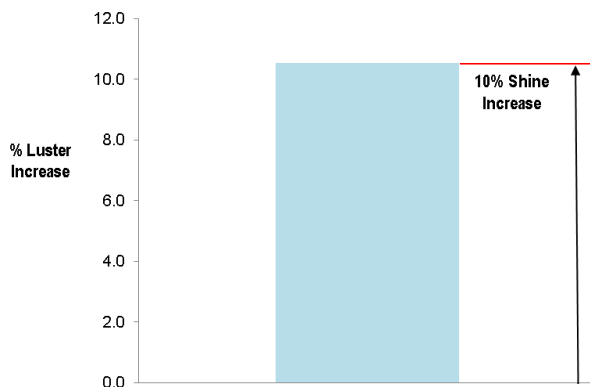


Figure 7: Crodazoquat MCC increases shine on coloured Asian hair by 10.5%

Crodazoquat MCC Shine Increase on Relaxed Brazilian Hair

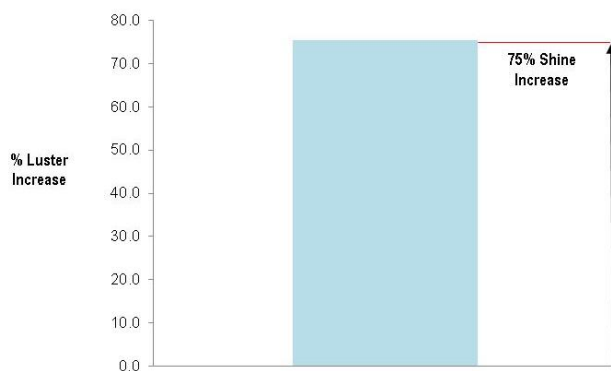


Figure 8: Crodazoquat MCC increases shine on relaxed Brazilian hair by 75%

The shine enhancement of hair treated with **Crodazoquat MCC** is visually perceptible. The relaxed Brazilian hair tress treated with **Crodazoquat MCC** (left side of Figure 9) has a tighter shine band, indicating more lustre or shine than the untreated tress (right side of Figure 9). The shine enhancement of the hair treated with **Crodazoquat MCC** can be detected with the eye.

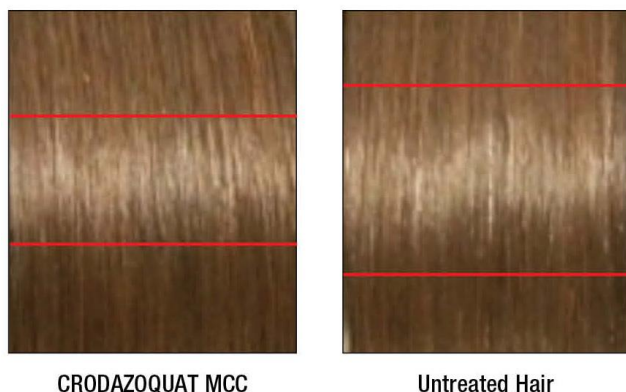


Figure 9: Tighter shine band of relaxed Brazilian hair treated with Crodazoquat MCC is a visually perceptible indication of increased lustre

Tress Testing

Although instrumental tests are an important means of quantifying performance results, some results cannot be detected by instruments. Panellist tress testing plays a powerful role in determining whether desired results are consumer perceivable.

A tress test was conducted with **Crodazoquat MCC** on bleached Caucasian hair. The hair tresses were evaluated by a 20 person panel to compare **Crodazoquat MCC** versus BTMS in a simple conditioning system (1.5% active quat, 4.5% fatty alcohol, 0.5% preservative, Q.S. Water). A range of wet and dry attributes were tested, including: (1) Wet: detangling, combing, and feel; and (2) Dry: combing-body, combing-ends, and feel. On bleached Caucasian hair, comparable performance was observed in dry attributes, but **Crodazoquat MCC** was overwhelmingly preferred for all wet attributes (depicted in Figure 10).

Crodazoquat MCC is highly preferred for all wet attributes on bleached Caucasian hair

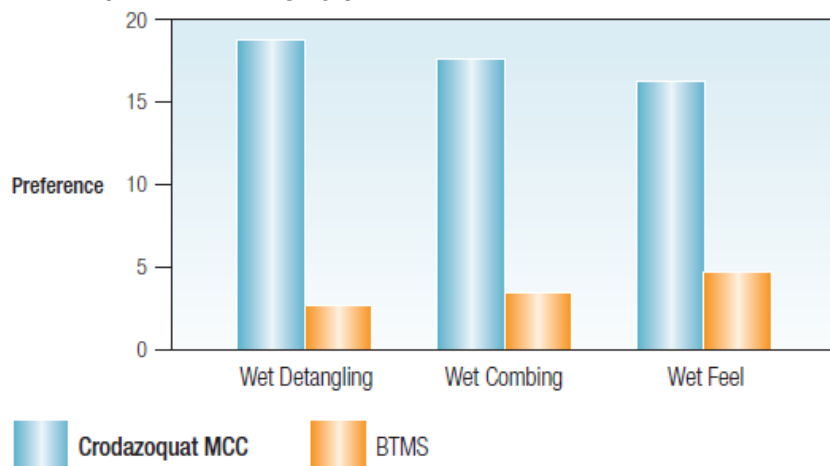


Figure 10: Bleached Caucasian hair tress testing results reveal an overwhelming preference for Crodazoquat MCC on all wet attributes

Salon Studies

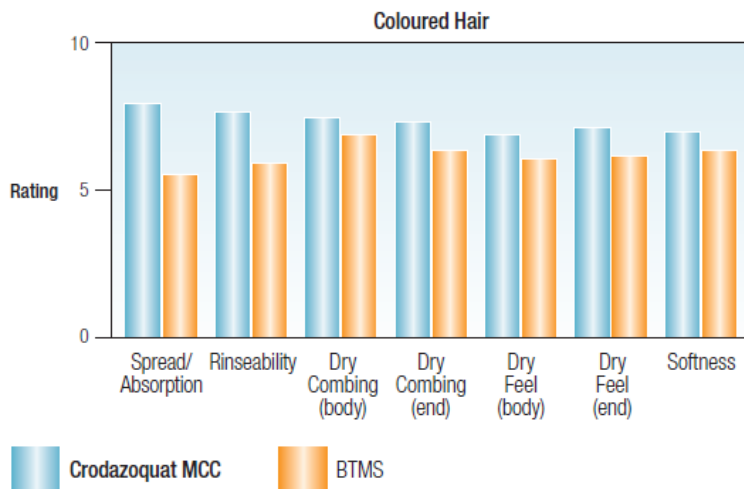
When evaluating the performance of personal care ingredients, studies using instrumental tests are an important means of generating objective results for assessment. However, some sensory results cannot be detected by instrumentation alone. Salon testing is an invaluable means of determining how consumers will perceive certain benefits.

Three in-house salon studies were conducted to evaluate the sensory performance of **Crodazoquat MCC**:

- A simple 1.5% quat conditioning system containing **Crodazoquat MCC** was compared to a simple 1.5% quat conditioning system containing BTMS on colour-treated Caucasian hair
- A basic conditioning prototype containing **Crodazoquat MCC** was compared to a premium mass commercial conditioner benchmark containing BTMS on colour-treated Caucasian hair, Asian hair, and Hispanic hair
- A conditioning prototype formulation containing **Crodazoquat MCC** was compared to a commercial African hair conditioner benchmark on natural African hair and relaxed African hair

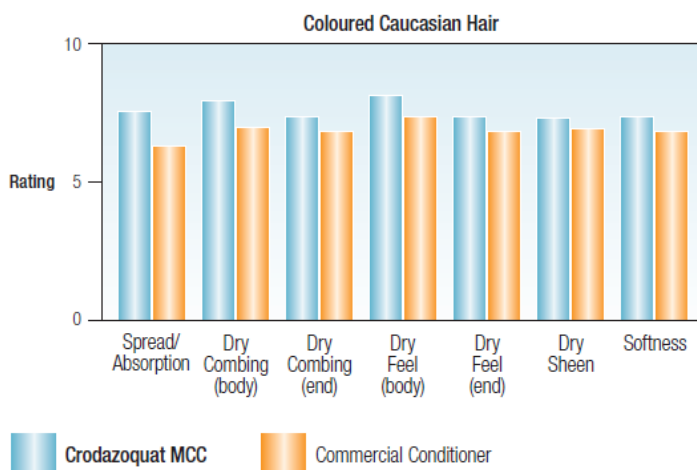
In the first in-house salon evaluation, a licensed cosmetologist evaluated **Crodazoquat MCC** and BTMS in a half-head study on five panellists with colour-treated hair. The cosmetologist rated the hair on a number of attributes on a scale of one to ten, with one being poor and ten being excellent. **Crodazoquat MCC** and BTMS were each used in a simple 1.5% active quat conditioning system. **Crodazoquat MCC** outperformed BTMS in a number of attributes, especially for dry aesthetics (Figure 11).

Crodazoquat MCC Preferred in the Salon to BTMS for Dry Aesthetics

**Figure 11: Crodazoquat MCC outperformed BTMS on dry attributes in a salon study**

In a second in-house salon study, a basic conditioning prototype containing **Crodazoquat MCC** (Formulation HP-381) was compared to a premium mass commercial conditioner benchmark containing BTMS. A half-head study was conducted on fourteen panellists: 5 panellists with Coloured hair, 5 panellists with Asian hair, and 4 panellists with Hispanic hair. The hair was evaluated by a licensed cosmetologist and rated on a number of attributes on a scale of one to ten, with one being poor and ten being excellent. The **Crodazoquat MCC** conditioner performed comparably to the premium mass commercial conditioner on Asian and Hispanic hair. On coloured Caucasian hair, the **Crodazoquat MCC** conditioner outperformed the premium mass commercial conditioner for dry aesthetics (Figure 12).

Crodazoquat MCC Basic Conditioner Outperforms Premium Mass Commercial Conditioner for Dry Aesthetics in the Salon

**Figure 12: Crodazoquat MCC conditioner outperformed commercial premium mass BTMS conditioner on coloured Caucasian hair for dry attributes in a salon study**

In a third salon study conducted on African hair, a conditioning formulation containing **Crodazoquat MCC** (Formulation HP-408) was compared to a commercial African hair conditioner benchmark. Salon studies are particularly important when testing performance on African hair due to the difficulty of sourcing African hair that is long enough for instrumental testing. A half-head study was conducted on 35 panellists with African hair: 21 with relaxed African hair and 14 with natural African hair. The hair was evaluated by a licensed stylist and rated on a number of attributes on a scale from one to ten, with one being poor and ten being excellent. In order to best assess performance on African hair, three attributes that are particularly important to address African hair needs were added to the list of attributes normally used to assess other hair types: Breakage, Mass Volume (density), (Ease of) Styling. As with the other attributes, a higher score on these three attributes indicates better performance. The conditioner containing **Crodazoquat MCC** outperformed the commercial African hair conditioner benchmark on dry aesthetics for both the natural and relaxed hair, as shown in Figures 13 and 14.

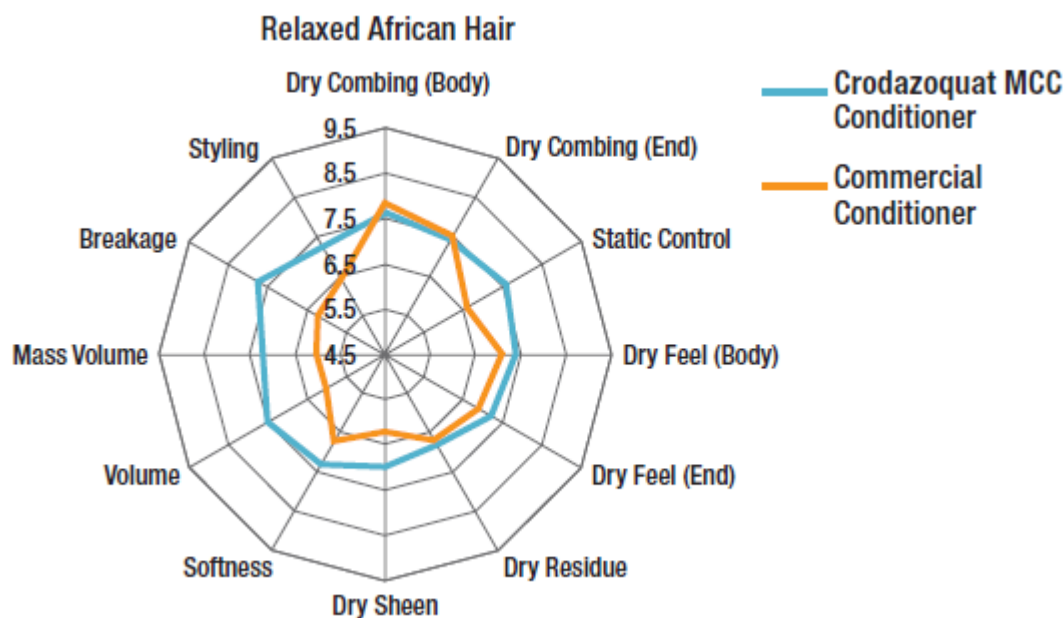


Figure 13: Crodazoquat MCC conditioner outperformed commercial conditioner on relaxed African hair for dry attributes in a salon study

As shown in Figure 13, the conditioner containing **Crodazoquat MCC** outperformed the commercial African Hair conditioner on nearly all dry attributes on relaxed African hair (performance was at parity on Dry Combing Body and Dry Combing End attributes). Notably, the conditioner containing **Crodazoquat MCC** significantly outperformed the commercial African hair conditioner on Breakage and Mass Volume attributes, which address important African hair needs for anti-breakage and appropriate density.

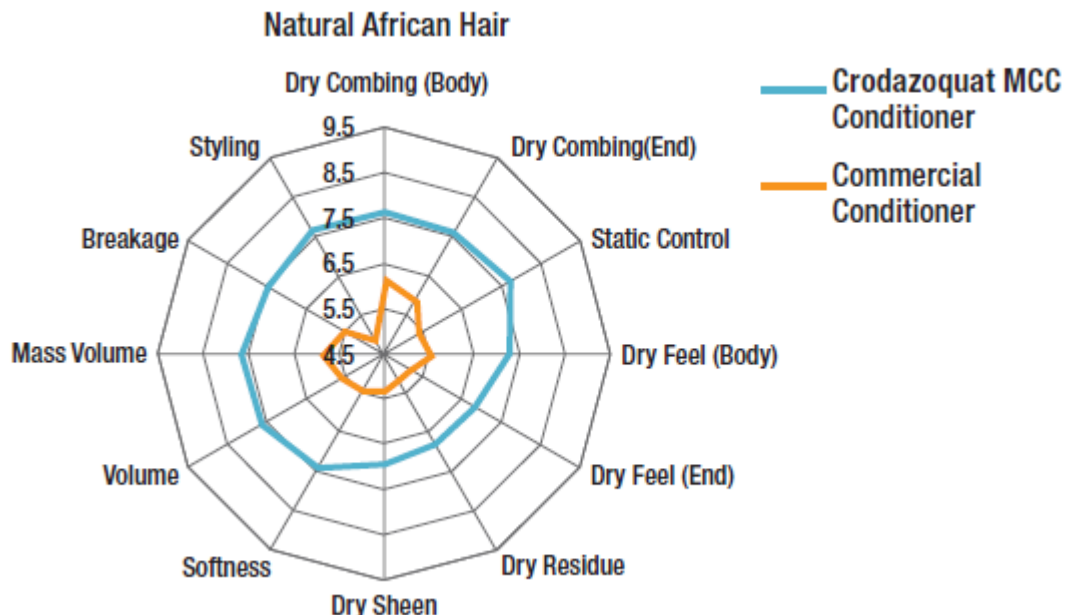


Figure 14: Crodazoquat MCC conditioner outperformed commercial conditioner on natural African hair for dry attributes in a salon study

Figure 14 shows that the conditioner containing **Crodazoquat MCC** outperformed the commercial African hair conditioner on all dry attributes on natural African hair. Once again, the **Crodazoquat MCC** conditioner significantly outperformed the commercial African hair conditioner on Breakage, Mass Volume, and Styling attributes, which address important African hair needs for anti-breakage, appropriate density, and ease of styling.

The tress testing and salon studies reveal that **Crodazoquat MCC** delivers consumer perceivable benefits.

Conclusion

Crodazoquat MCC is a high performing conditioning technology that is especially effective on damaged hair. As a hybrid technology, it has a wide range of conditioning capability that has been shown to be effective across several ethnic hair types. **Crodazoquat MCC** promotes hair health by restoring natural hydrophobicity and enhancing hair aesthetics in a consumer perceivable way.

Crodazoquat MCC is also a highly efficient conditioning technology. It has a high cationic activity level at 70% and is provided in a convenient pastille form. Its use of cetearyl alcohol as a solvent, rather than the IPA or DPG that is often used in other cationic surfactants, results in a product without unnecessary solvents.

Crodazoquat MCC has broad regulatory acceptance (EINECS, REACH, and DSL compliant; IECIC and IECSC listed), which combined with its multicultural hair effectiveness makes it an excellent choice whether formulating for Asia Pacific, Latin America, North America, Europe, Africa, or globally.

References

1. Mintel GPND, January 2014-December 2104.
2. Home Hair Color – US, November 2013, Mintel
3. Journal of Cosmetic Science. Study of hair shine and hair surface smoothness, Gao T., Pereira A., Zhu S. , 2009 Mar-Apr; 60(2):187-97

Non-warranty

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MultiCultural Conditioner for Damaged Hair



CrodazoquatTM MCC

Crodazoquat MCC is a hybrid technology that enables conditioning on a broad range of hair types. Hair from different ethnicities has distinct conditioning needs, based on the differences observed in morphological characteristics. This is especially true for hair that has been damaged. **Crodazoquat MCC** has been developed to provide multicultural conditioning, improving the appearance, feel and manageability of hair regardless of ethnic origin. Having broad global regulatory acceptance, it is the perfect choice for your next conditioner, whether your target market is Asia, Europe, Latin America, North America, Africa, or the world.

Major Benefits:

- Enables conditioning on various ethnic hair types
- Especially effective on damaged hair
- Restores hydrophobicity
- Enhances hair aesthetics
- Detangling
- Conditioning
- Consumer-perceivable feel improvement

Unique Features:

- 70% Cationic activity
- 81.6% Naturally derived
- No Glycols
- No Volatile Organic Compounds (VOCs)
- Pastillated for ease of use
- EINECS, REACH, and DSL compliant; IECIC and IECSC listed

Applications:

- Leave on and rinse off conditioners
- Multicultural hair
- Treatments for damaged hair

Product Category: Quaternary Agent

INCI Name: Behentrimonium Methosulfate (and) Quaternium-87 (and) Cetearyl Alcohol

Physical Form: Pastille

Use Levels: 0.5-5%

Formulations:

- Multicultural Conditioner for Damaged Hair HP-381
- Multicultural Hair Mask for Damage Treatment and Protection HP-382
- Silicone-Free Multicultural Hair Mask HP-383
- Intensive Restoring Conditioner for African Hair HP-408

Datasheet: DS-302

US Patents: 6,838,419 and 6,953,773

Innovation you can build onTM

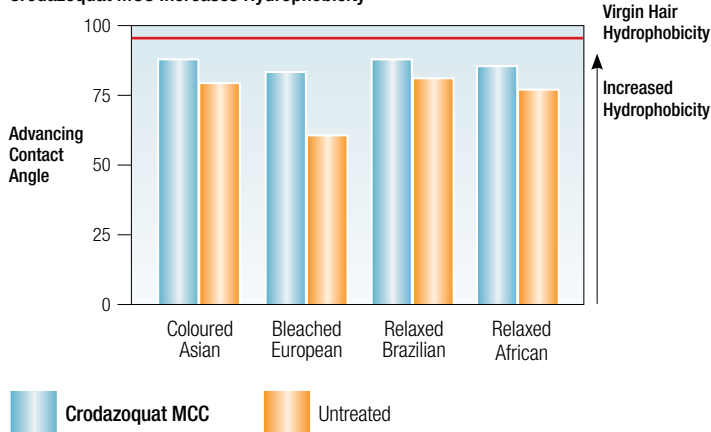
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Improved Hydrophobicity

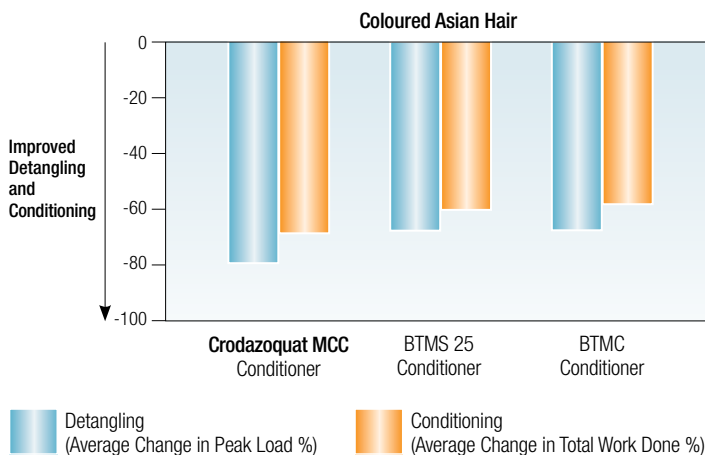
Healthy, undamaged hair is hydrophobic. Hair becomes more hydrophilic when damaged through chemical, mechanical, or environmental sources. If hair can be restored to a more hydrophobic state, it can be considered to be healthier.

To determine the hydrophobicity of hair, dynamic advancing contact angles of hair fibres of various ethnicities were measured before and after treatment with **Crodazoquat MCC**. Treatment with **Crodazoquat MCC** increases the hydrophobicity of the hair. The contact angle of the hair increased after treatment with **Crodazoquat MCC**, which is an indication of healthier hair.

Crodazoquat MCC Increases Hydrophobicity



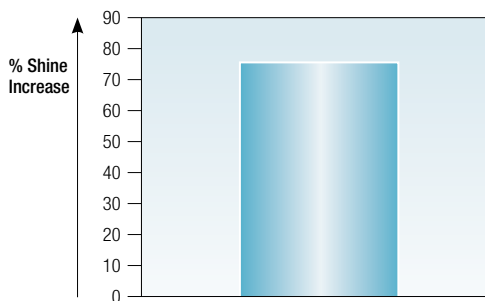
Dry Detangling and Conditioning



Enhanced Shine

Hair shine is a desired consumer attribute, particularly when the hair has been damaged. Coloured Asian and relaxed Brazilian hair tresses were treated with **Crodazoquat MCC** and analysed to evaluate shine utilising the Hair Shine Imaging System (SAMBA). Results reveal that **Crodazoquat MCC** enhances shine, especially on relaxed Brazilian hair.

Crodazoquat MCC Shine Increase on Relaxed Brazilian Hair Tresses



The shine enhancement of hair treated with **Crodazoquat MCC** is visually perceptible. The tress treated with **Crodazoquat MCC** (below, left) has a tighter shine band, indicating more lustre or shine than the untreated tress (below, right). Relaxed Brazilian hair treated with **Crodazoquat MCC** results in enhanced shine that can be detected with the eye compared to untreated hair.

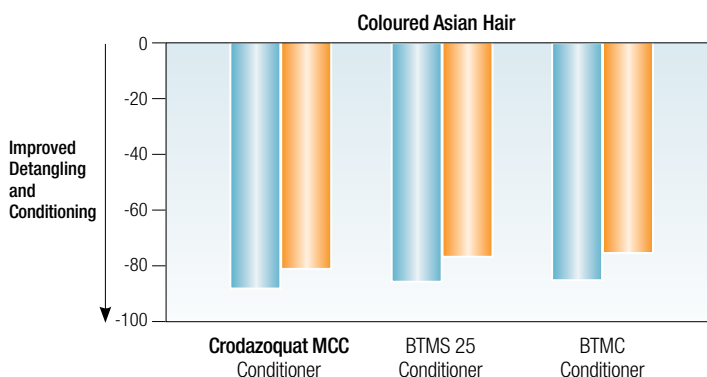


Excellent Detangling and Conditioning

To assess the detangling and conditioning capability of **Crodazoquat MCC**, the wet and dry combing forces on coloured Asian, bleached Caucasian, and relaxed Brazilian hair were measured. A **Crodazoquat MCC** conditioner was compared to Behentrimonium Methosulfate (BTMS) and Behentrimonium Chloride (BTMC) conditioners. The force required to comb through a hair tress is measured. A reduction in the combing force required to move a comb through a hair tress indicates how well a product is conditioning and detangling the hair.

The wet and dry combing study results reveal excellent detangling and conditioning from **Crodazoquat MCC**, measured by up to a 95% reduction in combing force on bleached Caucasian and relaxed Brazilian hair. On coloured Asian hair, **Crodazoquat MCC** outperforms BTMS and BTMC for detangling and conditioning.

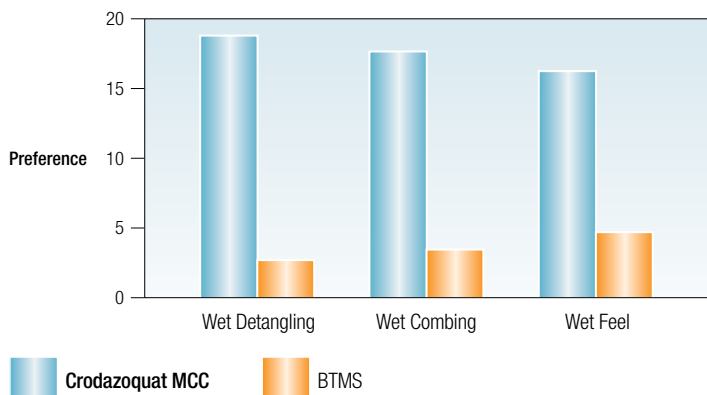
Wet Detangling and Conditioning



Tress Testing

Hair tresses were evaluated by a 20 person panel to compare **Crodazoquat MCC** versus BTMS. **Crodazoquat MCC** was overwhelmingly preferred for all wet attributes on bleached Caucasian Hair.

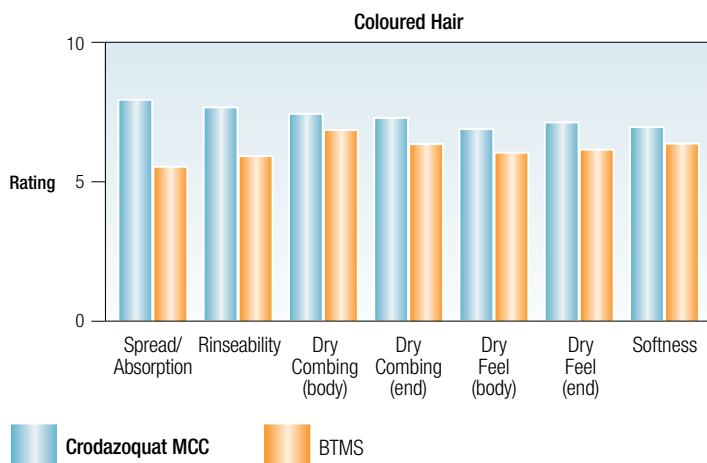
Crodazoquat MCC is Preferred for All Wet Attributes



Salon Studies

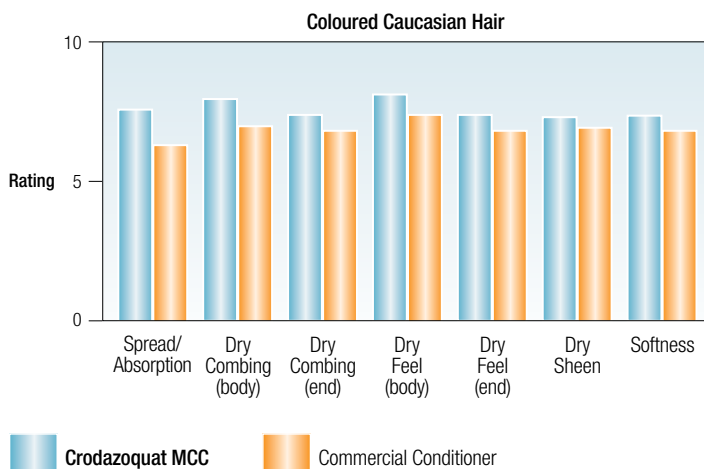
In a salon evaluation, a licensed cosmetologist evaluated **Crodazoquat MCC** and BTMS in a half-head study on panellists with colour-treated hair. The **Crodazoquat MCC** and BTMS were each used in a simple 1.5% active quat system. **Crodazoquat MCC** outperformed BTMS in a number of attributes, especially for dry aesthetics.

Crodazoquat MCC Preferred in the Salon to BTMS for Dry Aesthetics



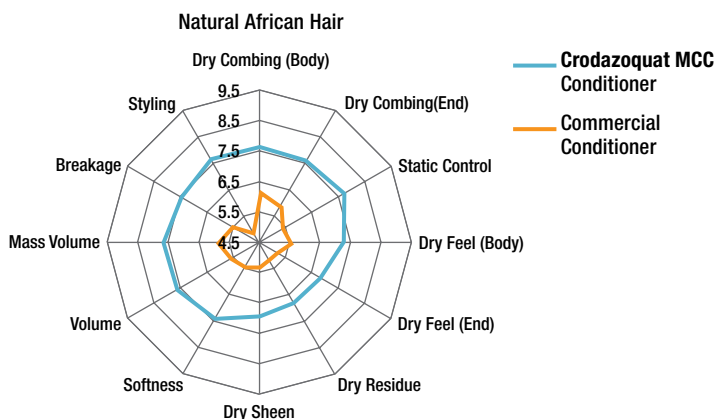
In a second salon study, a basic conditioning prototype containing **Crodazoquat MCC** was compared to a premium mass commercial conditioner benchmark. The **Crodazoquat MCC** conditioner performed comparably to the premium mass commercial conditioner on Asian and Hispanic hair. On coloured Caucasian hair, the **Crodazoquat MCC** conditioner outperformed the premium mass commercial conditioner for dry aesthetics.

Crodazoquat MCC Basic Conditioner Outperforms Premium Mass Commercial Conditioner for Dry Aesthetics in the Salon



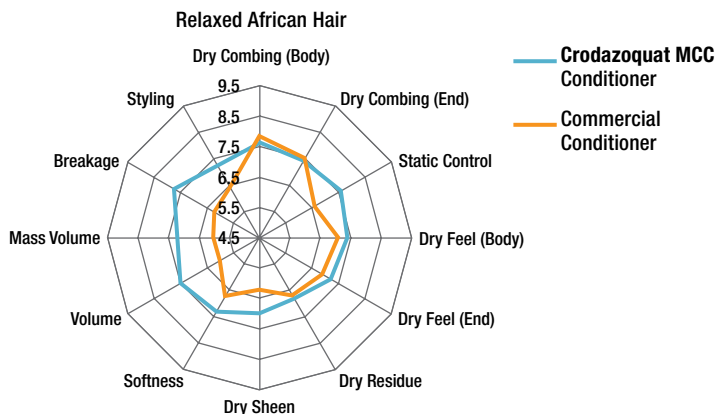
In a third half-head salon study conducted on African hair, a conditioning formulation containing **Crodazoquat MCC** (Formulation HP-408) was compared to a commercial African hair conditioner benchmark. In order to best assess performance on African hair, three attributes that are particularly important to address African hair needs were added to the standard list of attributes used to assess other hair types: Breakage, Mass Volume (density), (Ease of) Styling. As with the other attributes, a higher score on these three attributes indicates better performance. The **Crodazoquat MCC** conditioner outperformed the commercial African hair conditioner benchmark on dry aesthetics for both the natural and relaxed hair, as shown in the following graphs.

Crodazoquat MCC Conditioner Outperformed Commercial Conditioner on Natural African Hair for Dry Attributes in a Salon Study



The conditioner containing **Crodazoquat MCC** outperformed the commercial African hair conditioner on all dry attributes on natural African hair. Notably, the conditioner containing **Crodazoquat MCC** significantly outperformed the commercial African hair conditioner on Breakage, Mass Volume, and Styling attributes, which address important African hair needs for anti-breakage, appropriate density, and ease of styling.

Crodazoquat MCC Conditioner Outperforms Commercial Conditioner on Relaxed African Hair for Dry Attributes in a Salon Study



The conditioner containing **Crodazoquat MCC** outperformed the commercial African hair conditioner on nearly all dry attributes on relaxed African hair (performance was at parity on Dry Combing Body and Dry Combing End attributes). Once again, the conditioner containing **Crodazoquat MCC** significantly outperformed the commercial African hair conditioner on Breakage and Mass Volume, attributes which address important African hair needs for anti-breakage and appropriate density.

Multicultural Conditioner for Damaged Hair HP-381

Crodazoquat MCC has been shown to provide detangling and conditioning benefits on various ethnic hair types. **Arlasilk™ PLN** is a multifunctional ingredient with excellent emolliency that delivers a silky feel to hair. The few ingredients in this formulation effectively demonstrate performance similar to a premium mass conditioner commercial benchmark on coloured Caucasian hair, Asian hair and Hispanic hair.

Ingredients	%
Part A	
Water	90.04
Arlasilk PLN (Linoleamidopropyl PG-Dimonium Chloride Phosphate Dimethicone (and) Aqua)	2.00
Part B	
Crodazoquat MCC (Behentrimonium Methosulfate (and) Quaternium-87 (and) Cetearyl Alcohol (proposed))	2.41
Crodacol™ 1618 (Cetearyl Alcohol)	5.40
Part C	
Benzyl Alcohol (and) Methylchloroisothiazolinone (and) Methylisothiazolinone ²	0.15

Suppliers: 1. **Croda/Sederma/Crodamom** 2. Euxyl® K100, Schülke Inc.
pH: 4.91 ± 0.5; Viscosity: 49,000 cps ± 10%, (RVT Spindle #TC-3@10RPM @ 25°C @ 24hrs)

Procedure: Charge water to a beaker and heat to 80°C with mixing. Add ARLASILK PLN to water. Heat and mix Part B separately and add to water when it reaches 80°C. Cool to 40°C with mixing and add Part C. Cool to room temperature with mixing.

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Non-Warranty

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Intensive Restoring Conditioner for African Hair HP-408

Restore your hair back to health with this rich, intensely moisturising conditioner that will hydrate your hair and scalp and reduce breakage. **Crodazoquat MCC** restores hydrophobicity to hair, improves hair aesthetics and delivers a consumer-perceivable feel improvement. **Keravis™** penetrates the hair cuticle, building strength from within for optimal anti-breakage benefits. **DuraQuench™ IQ SA** delivers effective moisturisation to the scalp that is consumer-perceivable while also providing conditioning benefits to the hair. Derived from *pisum sativum* or 'pea', **Hydrosativum P** is a powerful moisturising biopolymer that hydrates the hair even at low humidities. **Arlasilk™ PLN** imparts a long lasting silky feel to the hair. Enriched with **Cropure™ Almond** and **Cropure Apricot Kernel**. On both relaxed and natural African hair, this formulation delivers improved dry attributes, including less breakage. To maximise results, massage into hair and scalp and rinse after 3 minutes.

Ingredients	%
Part A	
Water	76.00
Arlasilk PLN (Linoleamidopropyl PG-Dimonium Chloride Phosphate Dimethicone (and) Aqua)	2.50
Part B	
Crodazoquat MCC (Behentrimonium Methosulfate (and) Quaternium-87 (and) Cetearyl Alcohol)	3.00
Crodacol™ CS50 (Cetearyl Alcohol)	8.00
Crodacol S95 (Stearyl Alcohol)	5.00
Part B (continued)	
DuraQuench IQ SA (Cetyl Alcohol (and) Isostearyl Isostearate (and) Potassium Cetyl Phosphate (and) Cetyl Stearate (and) Stearic Acid)	1.00
Cropure Almond (Prunus Amygdalus Dulcis (Sweet Almond) Oil)	1.00
Cropure Apricot Kernel (Prunus Armeniaca (Apricot) Kernel Oil)	1.00
Part C	
Hydrosativum P (Hydrolyzed Pea Protein)	1.00
Keravis PE (Hydrolyzed Vegetable Protein PG-Propyl Silanetriol (and) Water (aqua))	1.00
Water (and) Sodium (and) Benzoate (and) Potassium Sorbate ²	0.50

Suppliers: 1. **Croda/Sederma** 2. Euxyl® K100, Schülke Inc.
pH: 4.75; Viscosity: 35,000 cPs ± 10%, (RVT Spindle #TC @10rpm @ 25°C @24 hrs.)

Procedure: Heat Part A to 75-80°C while mixing. Separately, heat part B to 75-80°C. Add Part B to Part A, while mixing. Cool to 40°C and add Part C. Cool to room temperature. Adjust pH to 4.5-5.0, if necessary

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