

Product Booklet

# Amylomer™ Products

Version 2

Cationic and  
Non-Ionic Starch  
Conditioners  
for over 25 years



## GRÄFECHEMIE

ADDITIVES FROM PLANT-BASED RAW MATERIALS

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powered by



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**Effectableyours**  
Platform of Expertise



## About us


Your Hair Care Experts –  
Authentic, Distinctive, Efficient.

We bring together the best of nature and science, because our products not only care for all hair and skin types, but also for the world we live in.

Economic growth must go hand in hand with environmental and social sustainability, a principle we have been committed to for over 25 years.

Innovative raw materials and modern cosmetic concepts underpin our approach and the proof of efficacy by “effectableyours” reflects our know-how.

We believe hair is an expression of personality and underlines individuality.



**Join us on a  
journey through  
the Amylomer™  
world.**

(Made in Germany)

## Raw Material



Example: potato starch

### Transparency of the supply chain

Our starch is grown and harvested locally. For more than 25 years it has been processed into Amylomer™ products by our ISO certified German contract manufacturer.



## Amylomer™: the effective film-forming alternative from naturally derived polymers

We offer hair and skin conditioning agents with improved biodegradability. Select from our Amylomer™ range products to gain the best performance for your concept.

Based on sustainable plant starch as a starting material, we use chemical modification of these natural polymers to yield the optimal application profile for different hair and skin types.



Amylomer™ products are:

carefully modified,  
biodegradable solutions  
are part of the range



paraben-free



not tested on animals



not genetically modified  
and non toxic



based on "renewable  
plants"



Product with financial

**climate contribution**

ClimatePartner.com/17346-2109-1001



## Product Portfolio

### Cationic Conditioning Agents

Amylomer™	CAT 531 / PF	CAT 531 AS+	Care 25
INCI	Starch Hydroxypropyltrimonium Chloride		
Amylomer™	HA-CAT 75	H-Care 05	
INCI	Hydroxypropyl Oxidized Starch PG Trimonium Chloride		

### Non-Ionic Conditioning Agent

Amylomer™	HA-NI
INCI	Sodium Hydroxypropyl Oxidized Starch Succinate







# Amylomer™ CAT 531

The universal hair and skin conditioning agent.  
(CAT 531 PF without listed preservatives)

## Product specification

- starch: potato
- INCI: Starch Hydroxypropyltrimonium Chloride
- product appearance: liquid
- active content: 20.0 %
- viscosity (20 °C, Brookfield): 150 – 500 mPa\*s
- pH-value: ~ 3.5 – 4.1 (PF 4.0-4.9)
- charge: cationic
- degree of substitution: ~ 0.5
- molecular weight: ~ 1400 – 2200 kDa (about 2500 kDa PF)
- natural index: ~ 94 % (CAT 531 PF 91 %)
- readily biodegradable: OECD 301 (28 days) ~ 65 %
- aquatox (Daphnia): 53 mg/L (OECD 202)

## Application

- shampoos
- conditioners
- solid bars
- liquid soaps
- body washes / shower gels

## Description of the product

This liquid conditioning agent is based on potato starch. Ideal to be used in surfactant-based applications. It improves combability and manageability of hair. Creates a natural, soft, and well-conditioned hair feel without static charge. In shower gels it delivers a nice skin feel and smoother foam during application. Can be used for hair care and skin care applications. Is synergistic with Guar types!

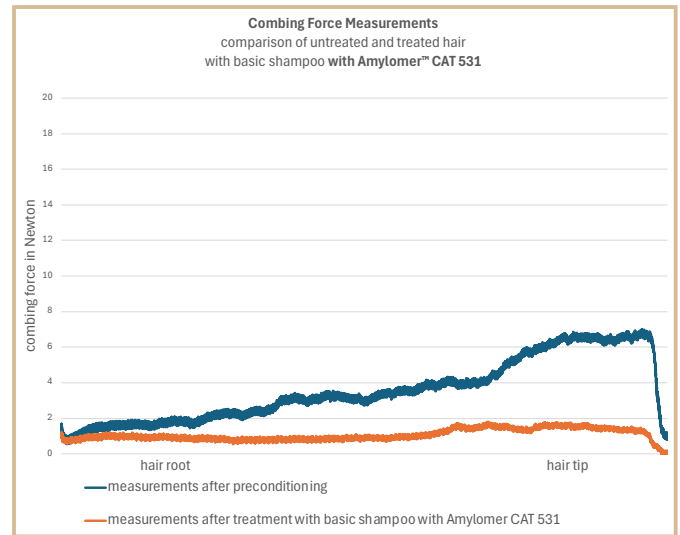
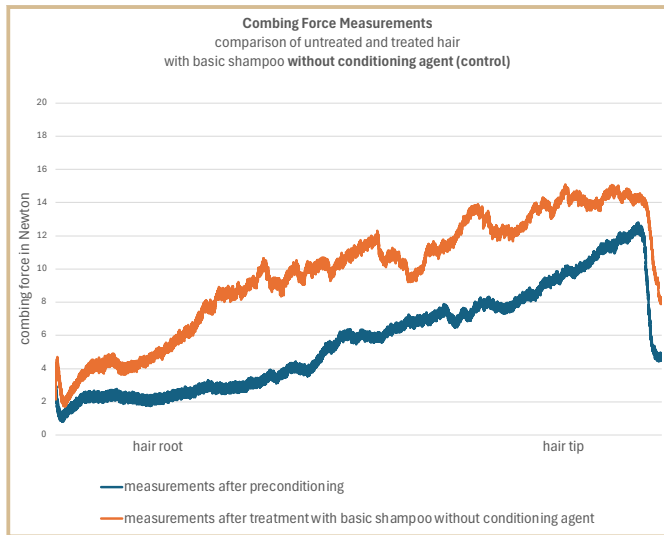


## Test results – combing force and antistatic

The following graphs show the results of combing force measurements of untreated and treated hair. A comparison of one hair swatch that was treated with a basic shampoo without any conditioning agent versus a hair strand that was treated with the same basic shampoo containing Amylomer™ CAT 531.

The gradient lines in the graphs indicate the required combing force needed (in Newton) to comb through (from left to right = from roots to end)!

While the first graph shows an increase of needed forces to comb through, the second graph proves, that the use of Amylomer™ CAT 531 (0.4% active matter) reduces the combing forces remarkably.



### Antistatic Test

Comparison before and after 10 combing strokes of the same basic shampoo with and without Amylomer™ CAT 531.

# Amylomer™ CAT 531 AS+

The sensory boosting polymer for skin care applications.

## Product specification

- starch: potato and rice
- INCI: Starch Hydroxypropyltrimonium Chloride
- product appearance: liquid
- active content: 21.6 %
- viscosity (20 °C, Brookfield): 500 – 1000 mPa\*s
- pH-value: ~ 3.4 – 4.3
- charge: cationic
- degree of substitution: ~ 0.5
- molecular weight: ~ 5700 kDa
- natural index: ~ 92 %
- readily biodegradable: OECD 301 (28 days) ~ 65 %
- aquatox (Daphnia): 53 mg/L (OECD 202)

## Application

- liquid soaps
- body lotions
- solid bars
- body washes
- cleansing

## Description of the product

A synergy of potato and rice starch creates the unique characteristics of this liquid conditioning agent. It mainly improves the sensorial properties on the skin and the creaminess of the foam. Its substantivity leads to a silky-smooth skin feel during the application. For leave-on and rinse-off applications. Is synergistic with Guar types!



## Test results – foam and sensory test

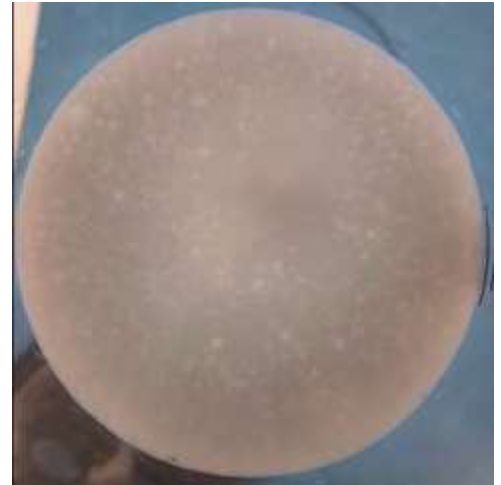
The following pictures and the graph summarize the effect onto the foam quality with and without Amylomer™ 531 AS+ in a surfactant system!

In this subjective test we compared

- a mixture of water, a basic shampoo without conditioning agent
- a mixture of water, a basic shampoo with Amylomer™ CAT 531 AS+ (0.4 % active matter).

The solutions have been mixed by a stirrer for 2 minutes. After further 3 minutes the pictures have been taken.

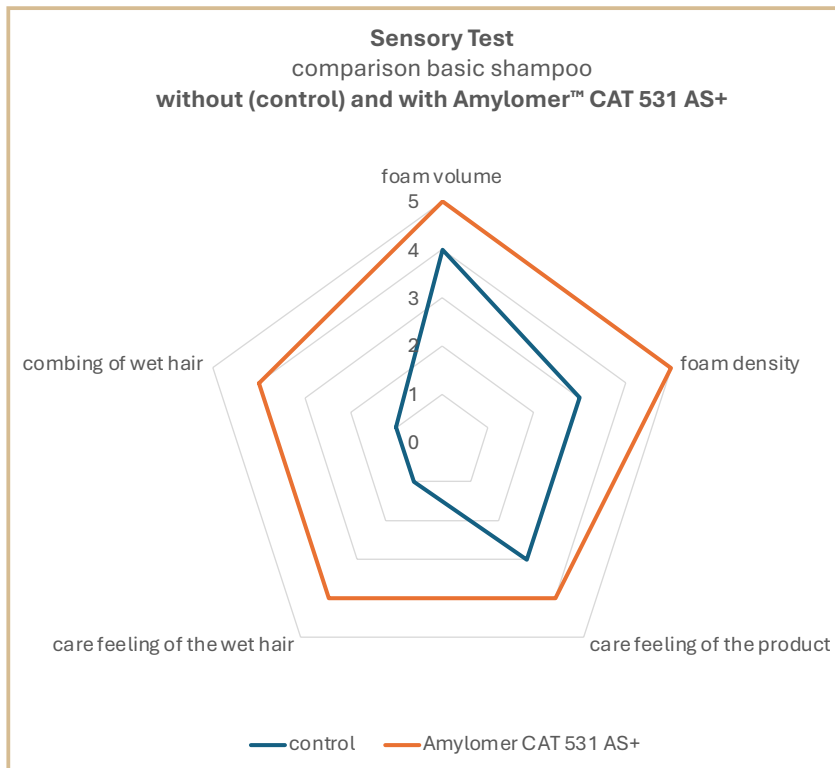
While the surfactant system without conditioning agent showed a quite rough foam with big bubble sizes, the foam with Amylomer™ CAT 531 AS+ got creamier, more dense, firmer and more robust!



*basic shampoo without conditioning agent*



*basic shampoo with Amylomer™ CAT 531 AS+*



# Amylomer™ Care 25

The eco-friendly hair and skin conditioning agent.

## Product specification

- starch: potato
- INCI: Starch Hydroxypropyltrimonium Chloride
- product appearance: liquid
- active content: 19.6 %
- viscosity (20 °C, Brookfield): 400 – 800 mPa\*s
- pH-value: ~ 3.5 – 4.1
- charge: cationic
- degree of substitution: ~ 0.25
- molecular weight: ~ 1800 kDa
- natural index: ~ 93 %
- readily biodegradable: OECD 301 (28 days) 73%
- aquatox (Algae): 10-100 mg/L (OECD 201)

## Application

- shampoos
- conditioners
- solid bars
- body wash
- liquid soaps
- cleansing
- body lotions

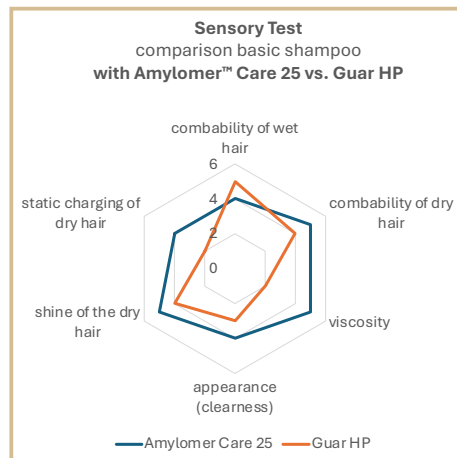
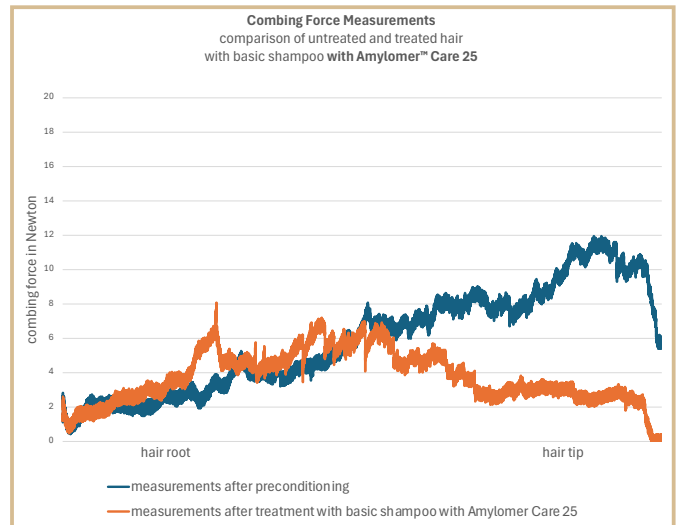
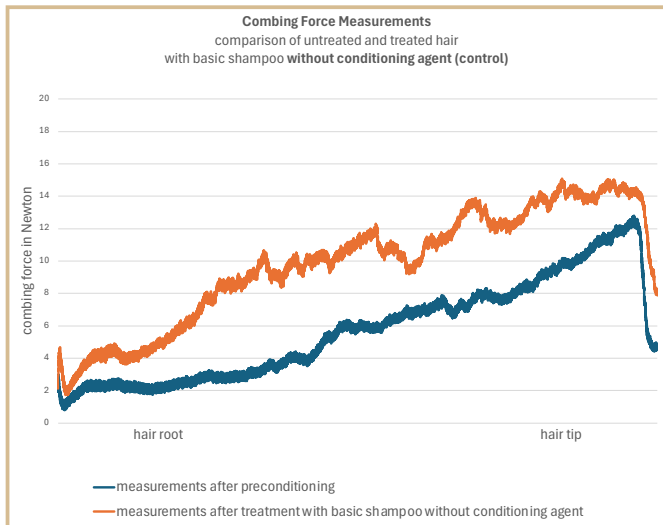
## Description of the product

Made from potato starch and carefully derived natural eco-friendly hair and skin conditioning agent. Fulfills the needs of modern, sustainable, readily biodegradable raw materials with great performance. Balances the needs of the ISO 16128 with requested performance on hair! Ideal for sensitive, fine hair and baby treatments!  
Is synergistic with Guar types!



## Test results – combing force and sensory test

The following graphs show the results of combing force measurements with and without Amylomer™ Care 25. The gradient lines in the graphs indicate the required combing force needed (in Newton) to comb through (from left to right = from roots to end). The graph on the left clearly proves an increase of combing forces needed to comb through. The graph on the right proves that Amylomer™ Care 25 decreases the combing forces mainly at the hair end – that part of the hair, with strongest porosity and by that the highest need of efficient conditioning. Due to its low cationic load the conditioning performance of Amylomer™ Care 25 is optimized to the different conditioning needs of root and hair end (structure related hair care).



The sensory test has been executed by experienced testers as follows:

- 1g basic shampoo with Amylomer™ Care 25 was given into the palm of a wet hand.
- 1g basic shampoo with Guar HP was given into the palm of the other wet hand.

We emulsified for one minute.

According to the aspects indicated in the graph to the left we rated as follows:

1 = very bad / 5 = very good. This procedure was repeated 5 times.

Amylomer™ Care 25 impresses with its unique sensory properties!

Beside an easier combing, we realized a nicer cosmetic approach of the test formulation during the application. A positive effect on the manageability can be expected. The diagram attempts to illustrate the differences to the Guar HP comparison product.



# Amylomer™ HA-CAT 75

The high-performance hair conditioning agent.

## Product specification

- starch: potato
- INCI: Hydroxypropyl Oxidized Starch PG Trimonium Chloride
- product appearance: liquid
- active content: 29.0 %
- viscosity (20 °C, Brookfield): 350 – 500 mPa\*s
- pH-value: ~ 3.5 – 4.1
- charge: cationic
- degree of substitution: ~ 0.75
- molecular weight: ~ 1300 kDa
- natural index: ~ 83%
- enhanced biodegradable: (according to OECD 302)
- aquatox (Algae): 10-100 mg/L (OECD 201)

## Application Description of the product

- shampoos
- solid bars
- conditioners

This liquid conditioning agent is based on potato starch. Due to the highest cationic degree of all Amylomer™ products it gives the most possible conditioning effect with the strongest tangible effect of potato starch. Developed to care and to protect hair without overload. Lowers combing forces, gives the hair a good grip and leaves it in a “natural-like” condition without build up. Ideal solution for thick, heavily damaged, or Asian hair.

Is synergistic with Guar types!



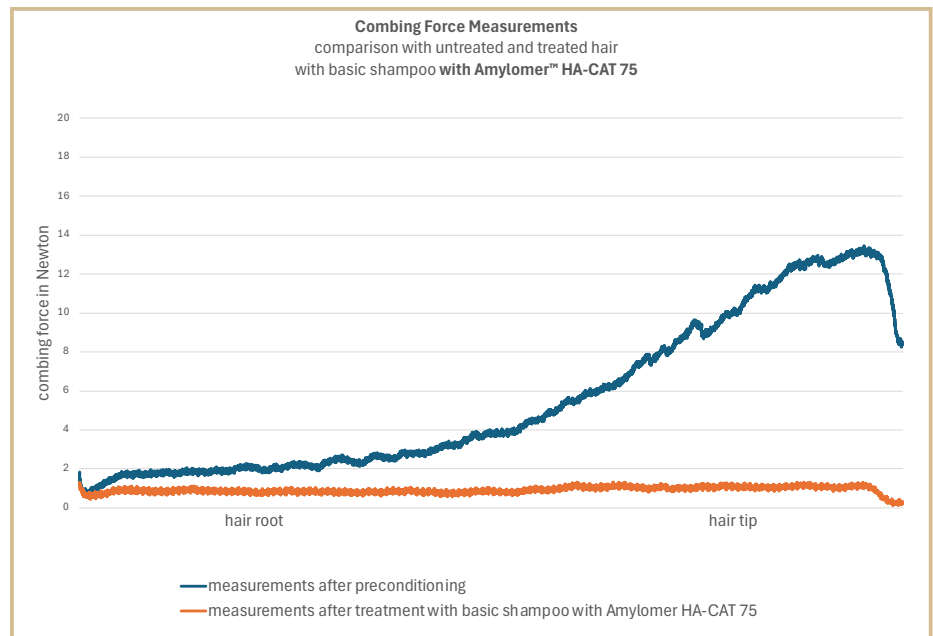
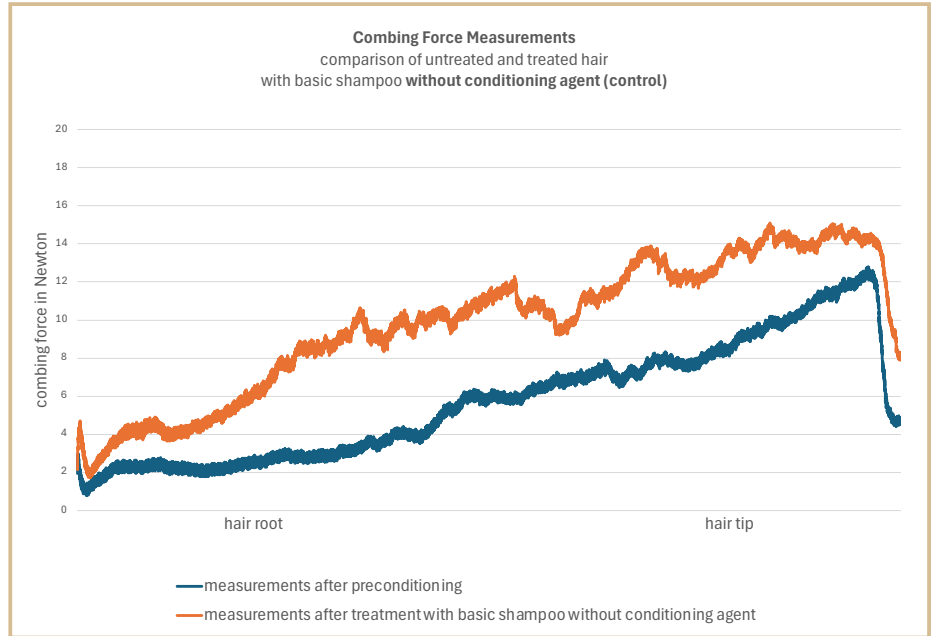
## Test results – combing force

The following graphs show the results of combing force measurements before and after, with and without Amylomer™ HA CAT 75!

Two swatches of hair have been measured in comparison.

- One swatch with the basic shampoo without conditioning agent (control).
- One swatch with Amylomer™ HA-CAT 75.

The gradient lines in the graphs indicate the required combing force in Newton, from the hair root to the tip. The conditioning effect of the Amylomer™ HA-CAT 75 evens out the rough cuticle of the hair. The very low combing force after the use of Amylomer™ HA-CAT 75 protects against further hair damage!



# Amylomer™ H-Care 05

**Low cationic loaded for specific hair and skin applications.**

## Product specification

- starch: potato
- INCI: Hydroxypropyl Oxidized Starch PG Trimonium Chloride
- product appearance: liquid
- active content: 26.2 %
- viscosity (20 °C, Brookfield): 350 – 550 mPa\*s
- pH-value: ~ 3.5 – 4.1
- charge: cationic
- degree of substitution: ~ 0.05
- molecular weight: ~ 1000 kDa
- natural index: ~ 99 %
- enhanced biodegradability: OECD 301
- aquatox (Algae): 10-100 mg/L (OECD 201)

## Application

- shampoos (especially for curly hair)
- body wash
- face cleansing
- pump soaps

## Description of the product

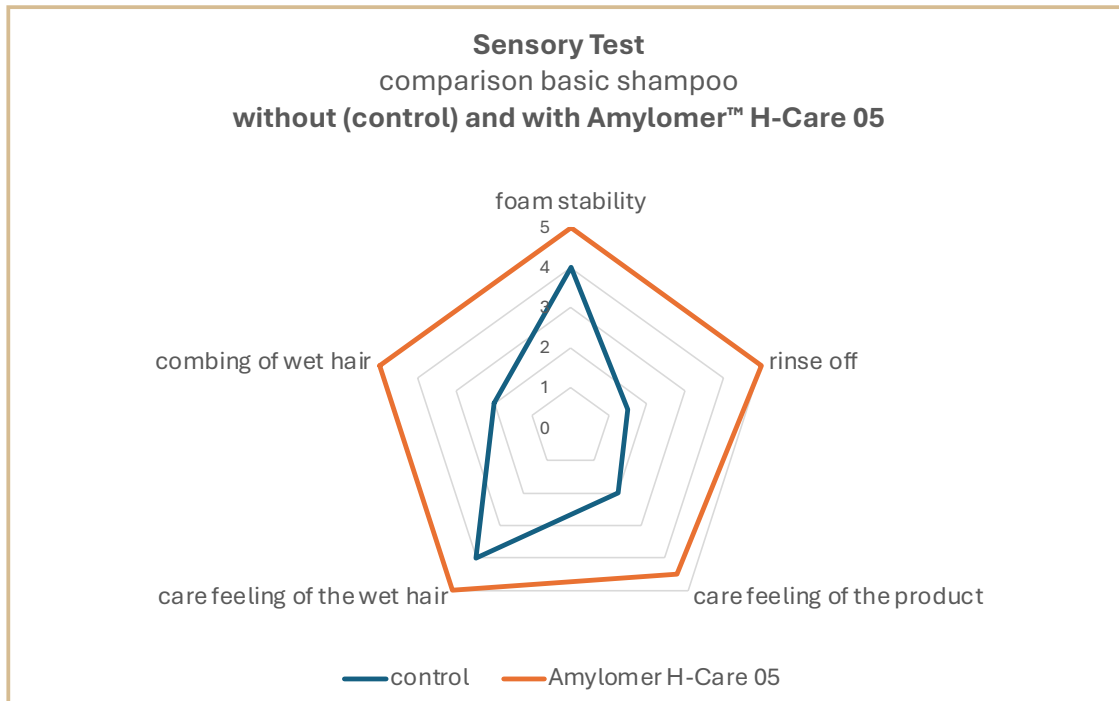
This liquid conditioning agent is based on potato starch. Due to the lowest degree of quaternisation of all Amylomer™ products, it is specifically designed to be used in “no tears” formulations, offers hold for curly hair. Supports the density of pumped foams. It works well in spray products. The spray keeps fine, with small drop sizes. Is synergistic with Guar types!



### Test results – sensory test

The following graph shows the result of the sensory test. 1g basic shampoo without conditioning agent and with Amylomer™ H-Care 05 is foamed up in wet hands of experienced testers for one minute, and rated from 1 = very bad to 5 = very good. This process is repeated 5 times.

The conditioning agent Amylomer™ H-Care 05 impresses with its unique sensory properties, it makes the hair easier to comb and shows a very good compatibility with surfactants. The following diagram attempts to illustrate the differences without conditioning agent.



# Amylomer™ HA-NI

The mild non-ionic polymer for sensitive skin.

## Product specification

- starch: potato
- INCI: Sodium Hydroxypropyl Oxidized Starch Succinate
- product appearance: liquid
- active content: 23.6 %
- viscosity (20 °C, Brookfield): 200 – 600 mPa\*s
- pH-value: ~ 4.6 – 5.2
- charge: non-ionic
- degree of substitution: ~ 0.02
- molecular weight: ~ 1000 kDa
- natural index: ~92 %
- readily biodegradable: OECD 301 (28 days) 62 %
- aquatox (Algae): >100mg/L (OECD 201)

## Application

- baby shampoos
- body washes for sensitive skin
- liquid soaps for sensitive skin
- body lotions

## Description of the product

This liquid conditioning agent is the only non-ionic potato starch derivative within the Amylomer™ range. It is mild, non-irritating\*, offers light conditioning properties and is recommended to be used for sensitive skin and applications for babies. Is synergistic with Guar types!



## Test results – skin hydration test and epicutaneous test

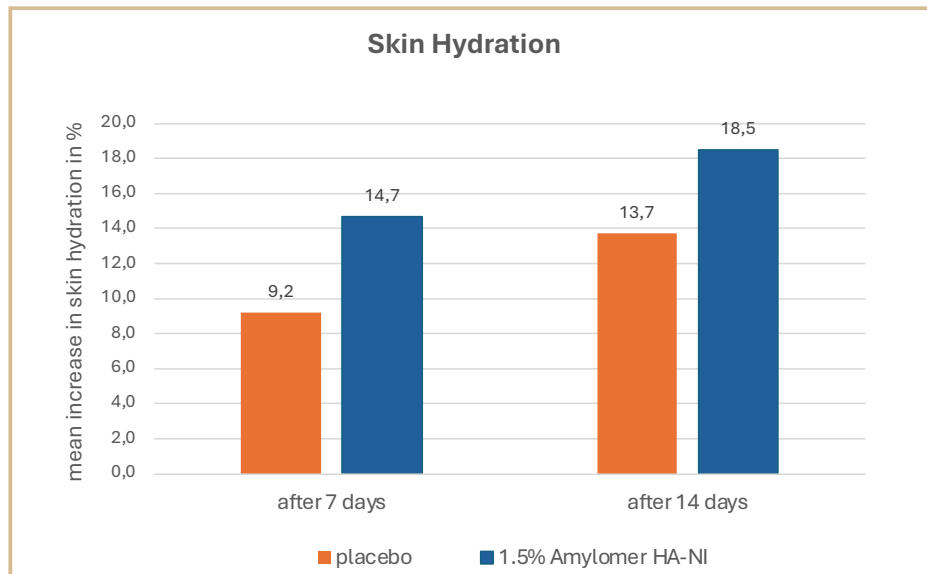
This graph shows the result of the skin hydration (Corneometer CM 825 PC from Courage+Khazaka) of an in-vivo study on 20 volunteers.

The measurement was executed after a period of 2 weeks using a body lotion placebo and a body lotion containing 1.5 % Amylomer™ HA-NI!

The hydration of the skin treated with the body lotion containing the Amylomer™ HA-NI was significantly improved after 7d and 14d.

The results of the epicutaneous test were carried out on 20 volunteers according to the international guidelines of the ICDRG (over 72 hours).

\*The results show that no irritative (toxic and allergic) reactions occurred.



# Properties and Applications

Overview from page 10 – 21

Amylomer™	Shampoos	Conditioners	Body Washes	Liquid Soaps	Solid Bars	Cleansing	Body Lotions
<b>CAT 531</b> universal hair and skin conditioning agent	◆	◆	◆	◆	◆		
<b>CAT 531 PF</b> universal hair and skin conditioning agent <b>without listet preservative</b>	◆	◆	◆	◆	◆		
<b>CAT 531 AS+</b> sensory boosting polymer for skin care			◆	◆	◆	◆	◆
<b>Care 25</b> eco friendly hair and skin conditioning agent	◆	◆	◆	◆	◆	◆	◆
<b>H-Care 05</b> low cationic loaded for specific hair and skin applications			◆	◆ <i>pump soap</i>	◆ <i>hand cream</i>	◆ <i>face</i>	
<b>HA-CAT 75</b> high-performance hair conditioning agent	◆	◆			◆		
<b>HA NI</b> mild non ionic polymer for sensitv hair and skin	◆ <i>baby</i>		◆ <i>for sensitive skin</i>	◆ <i>for sensitive skin</i>			◆

Different chemical modifications, molecular weight and degrees of substitution provide a wide range of different properties for conditioning different hair types and applications





**For conditioning  
different hair types:**



straight



wavy



curly



coily



kinky

... from fine  
to strong hair.

## Formulation Advice

- easy to use in laboratory and production
- no predilution is required
- dosage: 0.3 - 5 %
- can be used at any pH, preferably pH 3 - 8
- can be added in any production step
- allows cold production process
- the viscosity of surfactant systems remain at an almost constant level



## Benefits

### Formulator

- good compatibility with surfactants
- highly compatible with other raw materials
- excellent oxidation stability
- synergistic with Guar / PQ-10 / PQ 7
- uncritical sources and starting material
- safe availability
- unique sensory profile
- improved biodegradability
- ideal for formulations according to the ISO 16128

### Consumer

- hair conditioning without build-up effect
- reversible filmforming
- improves smooth, creamy foam quality
- improves combability
- reduces electrostatic charge
- does not penetrate the skin
- protects the hair from external influences
- made in Germany

### Production

- liquid state allows automatic dosing and simple mixing
- no prior dilution required
- simple storage
- available in various pails, drums or containers
- suitable for cold processes
- improved biodegradability
- negligible ecotoxicity



# Packaging Unit and Storage

**Our products are available worldwide.**

**Our products are available in various container sizes:**

- 22-litre canister
- 210-litre bung drum
- 1,100-litre IBC

## **Storage**

- temperature: between 5 °C – 25 °C in original closed package
- shelf life: 24 months



## From Hamburg to the World

The development of our products and  
our formulations have taken place in  
one of the greenest cities in the world  
... Hamburg!

Meet our  
formulations  
powered by



Foamy **Blankenese** Shampoo  
Mild **Sternschanze** Shampoo  
Caring **Sankt Pauli** Shampoo  
Calming **Ottensen** Baby Body Wash  
Creamy Solid Bar **Winterhude** Shampoo  
Nourishing **Uhlenhorst** Conditioner  
Rich **Altona** Showergel  
Sensitive **Eppendorf** Body Lotion  
Smooth **Neustadt** Hand Cream







## Foamy **Blankenese** Shampoo

A clear shampoo with a light and voluminous foam. This shampoo has a high conditioning effect and gives a natural light-care feeling without any build-up effect.

### Shampoo - Classic Surfactant System 1762-0011-05

PHASE	TRADE NAME	INCI NAME	SUPPLIER	% W/W
A	Water	Aqua	-	53.24
A	Dehyton® K	Cocamidopropyl Betaine	BTC Europe GmbH	12.38
A	Texapon® NSO UP	Sodium Laureth Sulfate	BTC Europe GmbH	27.75
A	Plantacare® 818 UP	Coco-Glucoside	BTC Europe GmbH	4.13
A	Sodium Benzoate	Sodium Benzoate	Tilge Robert E.M.	0.30
A	Potassium Sorbate	Potassium Sorbate	Tilge Robert E.M.	0.20
A	Amylomer™ HA-CAT 75	Hydroxypropyl Oxidized Starch PG Trimonium Chloride	Gräfe Chemie GmbH	1.40
B	Citric Acid	Citric Acid	Azelis	0.60

### Processing

- Mix ingredients step by step in given order, until completely dissolved and homogeneous distributed.
  - Adjust pH with phase B.
  - If desired: Increase viscosity by adding sodium chloride.
- appearance: clear shampoo
  - pH-value: 4.3 - 4.7
  - viscosity (Haake, 22°C, RV4, 10rpm): ~ 7000 mPa\*s
  - stability: proven
  - microbiological challenge test: passed



## Mild **Sternschanze** Shampoo

A clear shampoo with a stable and voluminous foam that is a particularly mild cleanser. The shampoo gives a very good shine of dry hair without static charge.

### Shampoo - Natural Surfactant System 11762-0003-1

PHASE	TRADE NAME	INCI NAME	SUPPLIER	% W/W
A	Water	Aqua	-	66.40
A	Plantacare® 818 UP	Coco-Glucoside	BTC Europe GmbH	18.40
A	Dehyton® PK 45	Cocamidopropyl Betaine	BTC Europe GmbH	4.80
A	Sulfopon® 1216 G	Sodium Coco-Sulfate	BTC Europe GmbH	6.40
A	Sodium Benzoate	Sodium Benzoate	Tilge Robert E.M.	0.30
A	Potassium Sorbate	Potassium Sorbate	Tilge Robert E.M.	0.20
B	Amylomer™ Care 25	Starch Hydroxypropyltrimonium Chloride	Gräfe Chemie GmbH	2.00
C	Citric Acid	Citric Acid	Azelis	1.50

### Processing

- Mix ingredients of phase A step by step in given order and heat up to 60°C.
  - appearance: clear shampoo
  - pH-value: 4.3 - 4.7
- At 45 °C mix phase B to phase A.
  - viscosity (Haake, 22°C, RV4, 10rpm): ~ 8000 mPa\*s
- Adjust pH with phase C.
  - stability: proven
- If desired: Increase viscosity by adding sodium chloride.
  - microbiological challenge test: passed





## Caring **Sankt Pauli** Shampoo

A clear shampoo with a caring and voluminous foam that is a particularly mild cleanser.  
The shampoo gives the hair a good grip light-care feeling.

### Shampoo – Natural Surfactant System with two Amylomer™ products 1762-0008

PHASE	TRADE NAME	INCI NAME	SUPPLIER	% W/W
A	Water	Aqua	-	64.90
A	Plantacare® 818 UP	Coco-Glucoside	BTC Europe GmbH	18.40
A	Dehyton® PK 45	Cocamidopropyl Betaine	BTC Europe GmbH	4.80
A	Sulfopon® 1216 G	Sodium Coco-Sulfate	BTC Europe GmbH	6.40
A	Sodium Benzoate	Sodium Benzoate	Tilge Robert E.M.	0.30
A	Potassium Sorbate	Potassium Sorbate	Tilge Robert E.M.	0.20
B	Inutec® H25P	Inulin	C.H. Erbslöh GmbH & Co. KG	1.00
B	Amylomer™ CAT 531	Starch Hydroxypropyltrimonium Chloride	Gräfe Chemie GmbH	2.00
B	Amylomer™ HA-NI	Sodium Hydroxypropyl Oxidized Starch Succinate	Gräfe Chemie GmbH	0.50
C	Citric Acid	Citric Acid	Azelis	1.50

### Processing

- Mix ingredients of phase A in given order and heat up to 60°C until completely dissolved.
  - At max. 45°C mix ingredients of phase B in given order, until everything is homogeneous.
  - Adjust pH with phase C.
  - If desired: Increase viscosity by adding sodium chloride.
- appearance: clear shampoo
  - pH-value: 4.3 – 4.7
  - viscosity (Haake, 22°C, RV4, 10rpm): ~11000 mPa\*s
  - stability: proven
  - microbiological challenge test: passed



## Calming **Ottensen** Baby Body Wash

A clear viscous shampoo. Mild, non-irritating, offers light care properties for sensitive skin and baby care.

### Baby Body Wash KB-0002

PHASE	TRADE NAME	INCI NAME	SUPPLIER	% W/W
A	Water	Aqua	-	38.05
A	Rewoteric® AM C MB (25%)	Sodium Cocoamphoacetate	Evonik Operations GmbH	12.80
A	Tego® Natural Betain	Betaine	Evonik Operations GmbH	2.50
A	Tego® Betain F 50	Cocamidopropyl Betaine	Evonik Operations GmbH	13.20
A	Plantacare® 818 UP	Coco-Glucoside	BTC Europe GmbH	6.00
A	Hostapon® SCI P (85%)	Sodium Cocoyl Isethionate	Clariant	2.50
B	Lamesoft® PO 65	Coco-Glucoside (and) Glyceryl Oleate	BTC Europe GmbH	1.00
B	Glycerin (99%)	Glycerin	All Organic Treasures GmbH	2.50
B	Potassium Sorbate	Potassium Sorbate	Tilge Robert E.M.	0.15
B	Sodium Benzoate	Sodium Benzoate	Tilge Robert E.M.	0.50
C	Water	Aqua	-	16.00
C	Amylomer™ HA-NI	Sodium Hydroxypropyl Oxidized Starch Succinate	Gräfe Chemie GmbH	2.00
C	Euperlan® NL Pearl	Hydrogenated Vegetable Oil (and) Cocamidopropyl Betaine (and) Glyceryl Oleate	BTC Europe GmbH	2.00
D	Citric Acid	Citric Acid	Caesar & Loretz GmbH	0.80

### Processing

- Mix ingredients of phase A in given order and heat up to 50 °C until completely dissolved.
  - Add ingredients of phase B in given order to phase A.
  - In a separate vessel mix ingredients of phase C together and when completely dissolved, add to the main mixture.
  - Adjust pH with phase D.
- appearance: pearly body wash
  - pH-value: 4.9 – 5.5
  - viscosity (Haake, 22°C, RV4, 10rpm): ~7000 mPa\*s
  - stability: proven
  - microbiological challenge test: passed





## Creamy Solid Bar **Winterhude** Shampoo

A creamy and white solid bar with a caring and voluminous foam that is a particularly mild cleanser. The shampoo offers a natural light-care without any build-up effect.

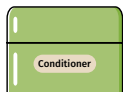
Amylomer™ CAT 531 is particularly well suited for fine and normal hair as well as for European hair.

### Solid Bar – Sulphatfree Surfactant System 1762-0072

PHASE	TRADE NAME	INCI NAME	SUPPLIER	% W/W
A	Elfan® AT 84 G - Powder	Sodium Cocoyl Isethionate	Azelis	41.25
A	Lanette® O	Cetearyl Alcohol	BTC Europe GmbH	20.00
A	Dermofeel® Viscolid MB	Hydrogenated Vegetable Oil	Evonik Operations GmbH	10.00
A	Sunflower Oil High Oleic	Helianthus Annuus Hybrid Oil	All Organic Treasures GmbH	8.00
B	Dermosoft® GMCY MB	Glyceryl Caprylate	Evonik Operations GmbH	0.25
B	Glycerin 99%	Glycerin	All Organic Treasures GmbH	8.00
C	Dehyton® PK 45	Cocamidopropyl Betaine	BTC Europe GmbH	6.00
C	Citric Acid	Citric Acid	Caesar & Loretz GmbH	1.00
C	<b>Amylomer™ CAT 531</b>	<b>Starch Hydroxypropyltrimonium Chloride</b>	<b>Gräfe Chemie GmbH</b>	<b>5.00</b>
C	Fragrance – floral fruity	Fragrance	Nöring Naturprodukte GmbH	0.50

### Processing

- Mix ingredients of phase A in given order and heat up to 85°C until completely dissolved.
  - Mix phase B extra and add to phase A.
  - Add ingredients of phase C in given order to phase A and heat up to 85°C until completely dissolved.
  - Add the mixture into a mould and possibly press.
- appearance: white solid bar
  - pH-value: N/A
  - viscosity: N/A
  - stability: proven
  - microbiological challenge test: passed



# Nourishing **Uhlenhorst** Conditioner

**Cream conditioner to boost the conditioning performance. Easy to distribute.**

## Conditioner KB-1762-0106

PHASE	TRADE NAME	INCI NAME	SUPPLIER	% W/W
A	Water	Aqua	-	79.40
A	Glycerin 99%	Glycerin	All Organic Treasures GmbH	10.00
A	Sodium Benzoate	Sodium Benzoate	Tilge Robert E.M.	0.30
A	Potassium Sorbate	Potassium Sorbate	Tilge Robert E.M.	0.20
A	Hydroxethylcellulose	Hydroxethylcellulose	Carl Roth GmbH	1.00
A	Lanette® O	Cetearyl Alcohol	BTC Europe GmbH	0.50
A	Emul Care	Cetearyl Glucoside	Dragonspice Naturwaren	1.50
A	Olivem 1000 MB	Cetearyl Olivat (and) Sorbitan Olivat	Dragonspice Naturwaren	2.00
B	Amylomer™ Care 25	Starch Hydroxypropyltrimonium Chloride	Gräfe Chemie GmbH	5.00
C	Citric Acid	Citric Acid	Caesar & Loretz GmbH	0.10

## Processing

- Mix ingredients of phase A in given order and heat up to 80°C.
  - At 45°C add phase B to phase A and homogenize.
  - Adjust pH with phase C.
- appearance: white emulsion
  - pH-value: 4.3 – 4.7
  - viscosity (Haake, 22°C, RV4, 10rpm): ~10000 mPa\*s
  - stability: proven
  - microbiological challenge test: passed





## Rich **Altona** Showergel

Rich and nourishing shower gel with creamy foam and silky smooth skin feel.

### Shower Gel 1762-0090-2

PHASE	TRADE NAME	INCI NAME	SUPPLIER	% W/W
A	Water	Aqua	-	38.65
A	Cosphaderm® Sodium LAAS	Sodium Anisate (and) Sodium Levulinate	Cosphatec GmbH	1.00
A	Sulfopon® 1216 G	Sodium Coco-Sulfate	BTC Europe GmbH	6.00
B	Plantacare® 818 UP	Coco-Glucoside	BTC Europe GmbH	20.00
B	Amisoft® CS 22	Disodium Cocoyl Glutamate (and) Sodium Cocoyl Glutamate (and) Water	Ajinomoto Co.	5.00
B	Glycerin 99%	Glycerin	All Organic Treasures	2.00
C	Water	Aqua	-	10.00
C	Amylomer™ CAT 531 AS+	Starch Hydroxypropyltrimonium Chloride	Gräfe Chemie GmbH	3.00
D	Water	Aqua	-	10.00
D	Bio Worlée Aloe IF 200x FD	Aloe Barbadosensis Leaf Juice Powder	Worlee GmbH	0.05
E	Lamesoft® PO 65	Coco-Glucoside (and) Glyceryl Oleate	BTC Europe GmbH	1.00
E	Fragrance: the saint/white wedding	Fragrance	Frey + Lau GmbH	0.50
F	Citric Acid	Citric Acid	Caesar & Loretz GmbH	0.80
F	Sodium Chloride	Sodium Chloride	Carl Roth GmbH	2.00

### Processing

- Mix ingredients of phase A in given order and heat up to 60 °C until completely dissolved.
  - Add ingredients of phase B in given order to phase A.
  - Mix phase C, D and E separately together and add in given order to the main mixture.
  - Adjust pH and viscosity with phase F.
- appearance: clear shower gel
  - pH-value: 4.9 – 5.5
  - viscosity (Haake, 22°C, RV4, 10rpm): ~ 3000 mPa\*s
  - stability: proven
  - microbiological challenge test: passed



# Sensitive **Eppendorf** Body Lotion

White body lotion that spreads easily with quick absorption, creates a light nourished feeling on the skin.

## Body Lotion 1762-0040-1

PHASE	TRADE NAME	INCI NAME	SUPPLIER	% W/W
A	Water	Aqua	-	70.40
A	Verstabil® SL non GMO	Sodium Levulinate (and) Potassium Sorbate	Evonik Operations GmbH	2.00
A	Glycerin 99,5%	Glycerin	Fauth + CO. KG	4.00
A	Lanette® O	Cetearyl Alcohol	BTC Europe GmbH	1.00
A	Olivem® 1000 MB	Cetearyl Oliviate (and) Sorbitan Oliviate	Dragonspice Naturwaren	4.00
A	Neutral Oil	Caprylic/Capric Triglyceride	Nöring Naturprodukte GmbH	7.00
A	Sheabutter	Butyrospermum Parkii (Shea) Butter	Dragonspice Naturwaren	2.00
A	Dermosoft® GMCY MB	Glyceryl Caprylate	Evonik Operations GmbH	0.20
A	Sunflower Oil	Helianthus Annuus Seed Oil	All Organic Treasures GmbH	7.50
A	Xanthan FNCS-PC	Xanthan Gum	Jungbunzlauer GmbH	0.30
B	Dermofeel® Toco 70	Helianthus Annuus Seed Oil (and) Tocopherol	Evonik Operations GmbH	0.50
<b>B</b>	<b>Amylomer™ CAT 531 AS+</b>	<b>Starch Hydroxypropyltrimonium Chloride</b>	<b>Gräfe Chemie GmbH</b>	<b>1.00</b>
C	Citric Acid	Citric Acid	Caesar & Loretz GmbH	0.10

## Processing

- Mix ingredients of phase A in given order and heat up to 80°C.
  - At 45°C add phase B to phase A and homogenize.
  - Adjust pH with phase C.
- appearance: white emulsion
  - pH-value: 4.8 – 5.4
  - viscosity (Haake, 22°C, RV4, 10rpm): ~ 9000 mPa\*s
  - stability: proven
  - microbiological challenge test: passed





## Smooth **Neustadt** Hand Cream

Delivers strong moisturizing properties and increases the skins elasticity.

### Hand Cream SI/1017 Powered by TER Ingredients

PHASE	TRADE NAME	INCI NAME	SUPPLIER	% W/W
A	Deionized water	Aqua		Qs
A	Glycerin 99%	Glycerin	TER Ingredients	3.00
A	Xanthan Gum	Xanthan Gum	TER Ingredients	0.30
A	CAREPHOS® N	Sodium Polyphosphate	ICL	0.20
C	<b>Amylomer™ HA-NI</b>	<b>Sodium Hydroxypropyl Oxidized Starch Succinate</b>	<b>Gräfe Chemie GmbH</b>	<b>1.00</b>
B	BeauSense E-SF	Polyglyceryl-3-Stearate (and) Sunflower Seed Oil Glycerides (and) Cetearyl Alcohol	(Roelmi)	4.00
B	Organic Apricot Oil	Prunus Armeniaca (Apricot) Kernel Oil	Natural Basics	5.00
B	Lanette O	Cetearyl Alcohol	BTC Europe GmbH	2.00
B	Lanette 18	Stearyl Alcohol	BTC Europe GmbH	2.00
B	Organic MCT Oil	Caprylic/Capric Triglyceride	Naturel Basics	3.00
B	Cetiol® OE	Dicaprylyl Ether	BTC Europe GmbH	3.00
C	HIDAL S-6P	1,2-Hexanediol	Daedal	1.00
C	HIDAL S-280 MB	Glyceryl caprylate	Daedal	0.30
C	DL- $\alpha$ -Tocopherol 96%	Tocopherol	TER Ingredients	0.20
C	Apricot (Org) Phytapure Extract 100Ap16 1:5	Aqua (and) Prunus Armeniaca Fruit Extract (and) Citric Acid (and) Sodium Benzoate (and) Potassium Sorbate	Blue Sky Botantics	1.00
D	Citric Acid	Citric Acid	TER Ingredients	Qs

### Processing

- Mix the components of phase A and heat up to 80°C.
  - Mix the components of phase B and heat up to 80°C.
  - Add phase B to phase A and homogenize for 5 minutes.
  - Cool down to 35°C and add phase C.
  - Set pH-value with phase D.
- appearance: white cream
  - pH-value: 5.3 – 5.7
  - viscosity: approx. 8.500 mPas (Brookfield, RV04, 20 °C, 20 rpm)
  - stability: stable for 3 months at 4°C, 20°C, 40°C and 45°C

# Effectable yours

## Effectable, because ...

- effective – tangible efficacy
- independent – discovery of mutual solutions
- objective – development on the basis of qualified measuring methods
- customised – adaptation of our testing methods and method development to meet requirements
- creative – take advantage of our network of bright minds

## Yours, because ...

together we will find solutions tailored to your needs – because long-term success is only possible through cooperation!

## Benefits

- efficacy testing of your hair care products
- documented certification of efficacy, including report
- preparation of claims

# Platform of Expertise

## Testing of your formulations in our in-house lab:

- synchronised washing station – comparing the sensory properties of hair care products → sensory behavior on the hair
- climate chamber – hair drying and curl retention
- proof of efficacy – dry combing force and wet combing force





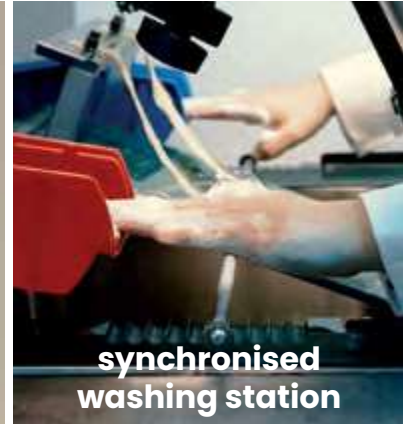
effectableyours



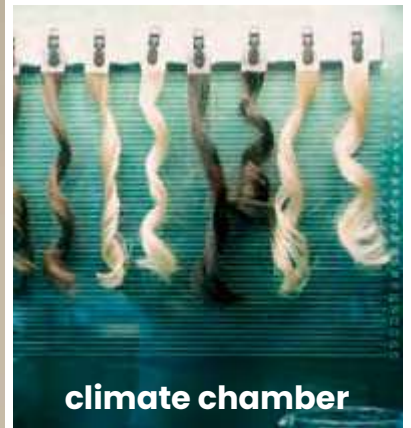
watch  
the  
video



[graefe-naturchemie.de](http://graefe-naturchemie.de)



**synchronised  
washing station**



**climate chamber**



**proof of efficacy**



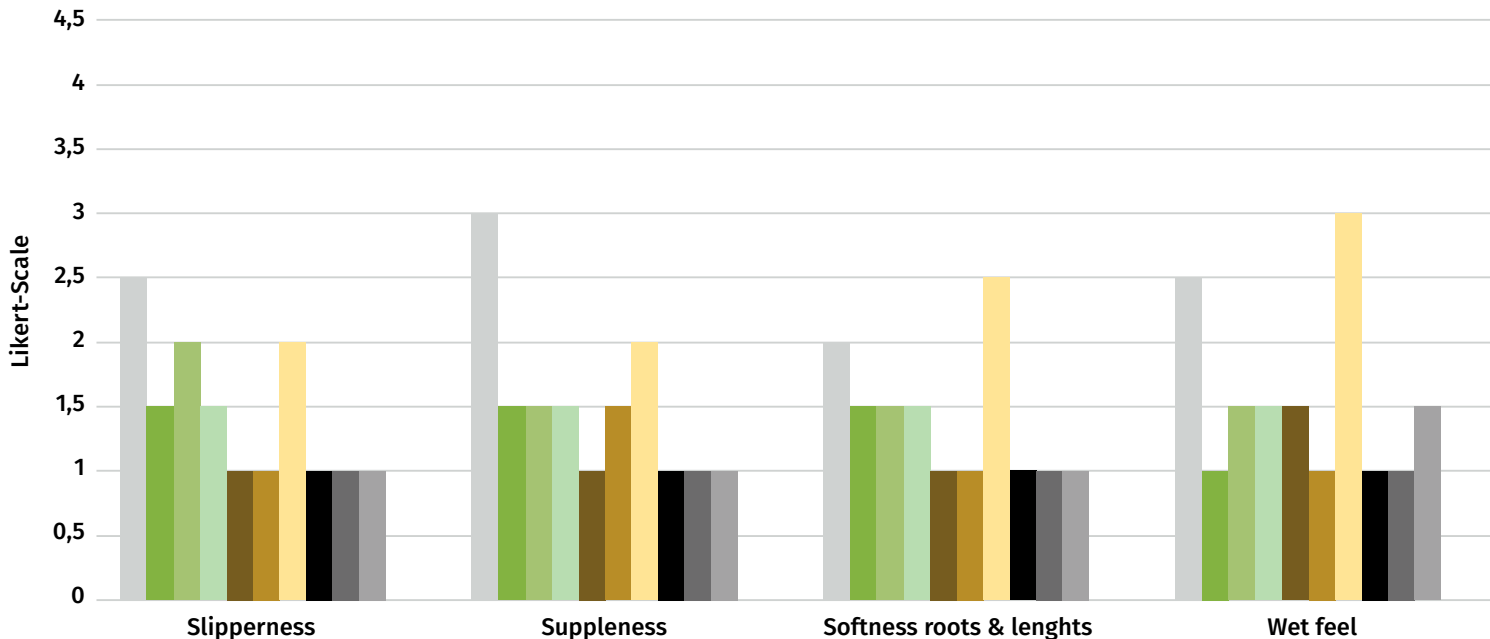
## Panel Test for sensory parameters

The following basic formulation was used to test the sensory performance of Amylomer™ products.

### Basic Shampoo #B10-001

TRADE NAME	INCI NAME	SUPPLIER	% W/W
Water	Aqua	-	54.26
Texapon	Sodium Laureth Sulfate	BTC Europe GmbH	32.14
Dehyton® PK 45	Cocamidopropyl Betaine	BTC Europe GmbH	8.10
Dermosoft® 1388	Glycerin (and) Aqua (and) Sodium Levulinate (and) Sodium Anisate	Evonik Operations GmbH	3.50
Amylomer™ products	Starch Conditioners	Gräfe Chemie GmbH	2.00

\*Amylomer™ products offer a wide range of applications for all hair types and sensitive skin.

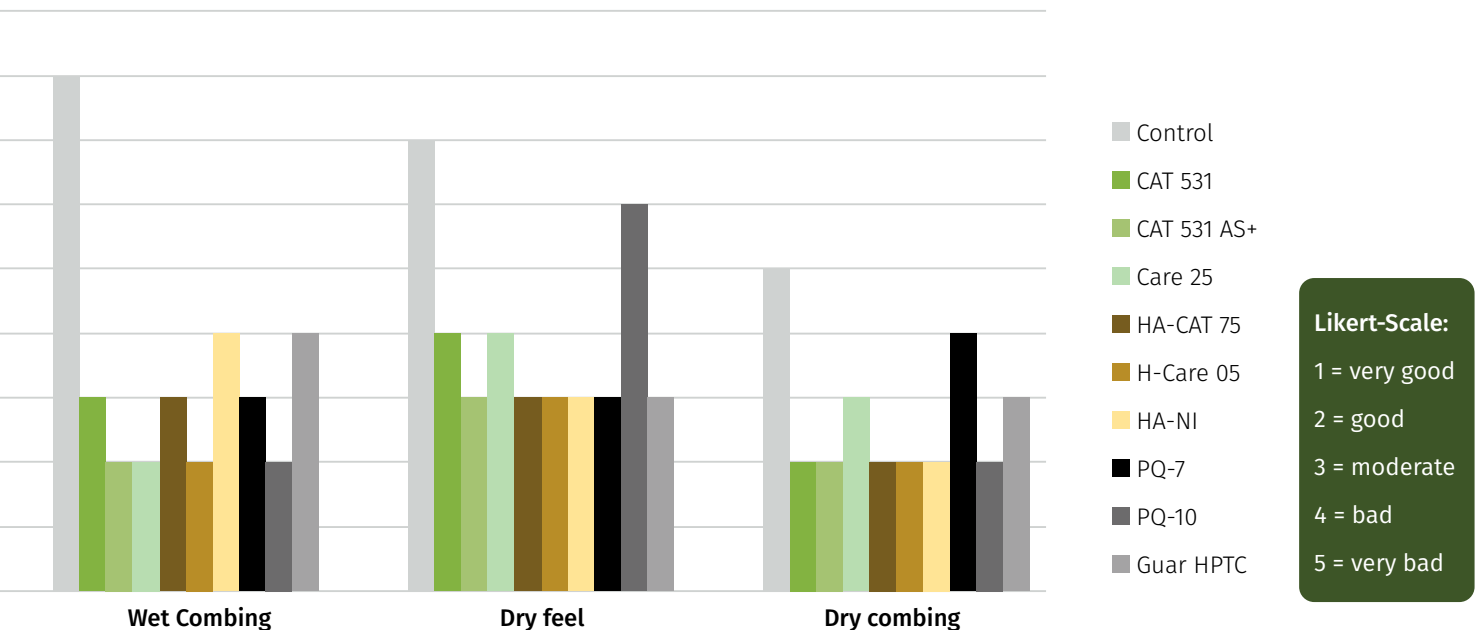


## Sensory Properties

The sensorial properties of the test formulations, containing the different conditioners have been evaluated by a panel of hair care experts.

## Sensory Parameter

Comparison Amylomer™ products vs. PQ-7, PQ-10 and Guar HPTC with an active ingredient concentration of 0.4%.



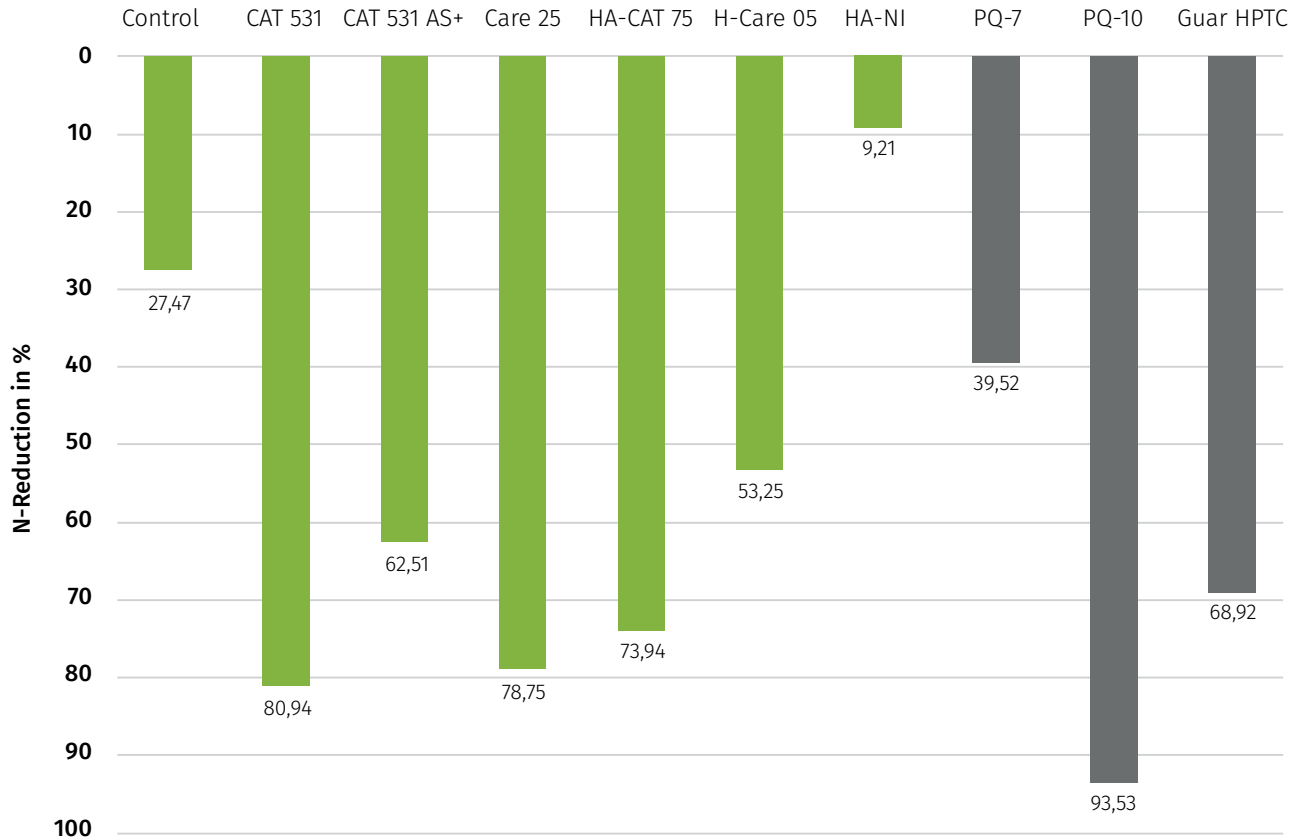


## Combing Force Measurements

The pre-conditioned hair tresses ensure that the tests are evaluated under comparable conditions. After drying (24 hours in the climate chamber), the measurements are carried out by combing force machine. Each application with every test substance has been repeated on individual hair pieces five times (including application-, distribution-, rinsing-, and foaming phase).

### Combing Force

Comparison Amylomer™ products vs. PQ-7, PQ-10 and Guar HPTC with an active ingredient concentration of 0.4%.



## Simply let us know

Looking to change the raw materials in your cosmetic formulation? Looking to get your product efficacy and claims tested and accurately certified?



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**WE WOULD BE DELIGHTED TO PROVIDE YOU WITH  
DOCUMENTATION AND/OR SAMPLES.**



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