

ISSUE MAY 2016

# COSMETOPOLITAN



## **COS INSIDE**

Latest news from  
RAHN Group

## **LAB NEWS**

Mild luxury  
cleansing: from  
"Creamy, liquid  
Body Wash" to  
"Luxurious, rich  
Face Cleanser"

## **AROUND THE WORLD**

Argan oil –  
beauty care from  
Morocco

## **GOOD TO KNOW**

Hair care – how  
to get it right!

# **RAHN**

Your partner for excellence

# Dear Readers,



---

Step into the colourful world of Cosmetopolitan.

We have lots of fascinating and interesting features lined up for you again in our summer issue, with reports on new raw materials in the RAHN portfolio and our new supplier AMSilk. Rinse-off is another topic and you can also look forward to immersing yourself in the world of the Berbers ...

I hope you enjoy reading this issue.

Sandra Gut  
from your RAHN team

# New raw materials in the portfolio

---

## AMSilk

Silkbeads and Silkgel are two innovative, vegan products for the effective care of stressed skin, inspired by natural silk proteins (details overleaf).

## Laboratoires Expanscience

Neurovity is a breakthrough for anti-aging acting on neuro-aging and melanogenesis. It regulates the communication between the cutaneous nervous system and the skin and stimulates “youth proteins” responsible for cell longevity.

## Spirig Pharma

Cosmospheres Hair Promotion Set consisting of Argan Beads, Hair Repair Beads and Conditioning Beads. All beads are ideally suited for shampoos, conditioner and styling products. They contain hair-nourishing ingredients and lend your product special flair.



**Activated Carbon Cosmospheres:** active charcoal provides particularly effective cleansing for skin and hair.

**Orchid Cosmospheres** contain precious plum kernel oil and **Marsala Cosmospheres** Cupuacu butter. Both lend your care products a special cachet.

## RAHN-Cosmetic Actives

*Bulbine frutescens* is the INCI of LIFTONIN®-XPERT, a botanical active substance for intelligent collagen management and youthful skin.

# Our new supplier

## AMSilk

---

### Efficient care of stressed skin with functional silk polypeptides

AMSilk are the world's first and only producer of functional silk polypeptides manufactured using a biotechnological process.

Skin with barrier disruptions or imbalances require special fast-acting protection from environmental influences.

Silkbeads and Silkgel are two innovative, vegan products for the effective care of stressed skin, inspired by natural silk proteins.

Silk polypeptides offer all the benefits of a film-former, but are non-occlusive. The silk film creates a physical protective shield, which can support and enhance the condition of stressed skin.

#### Silkbeads

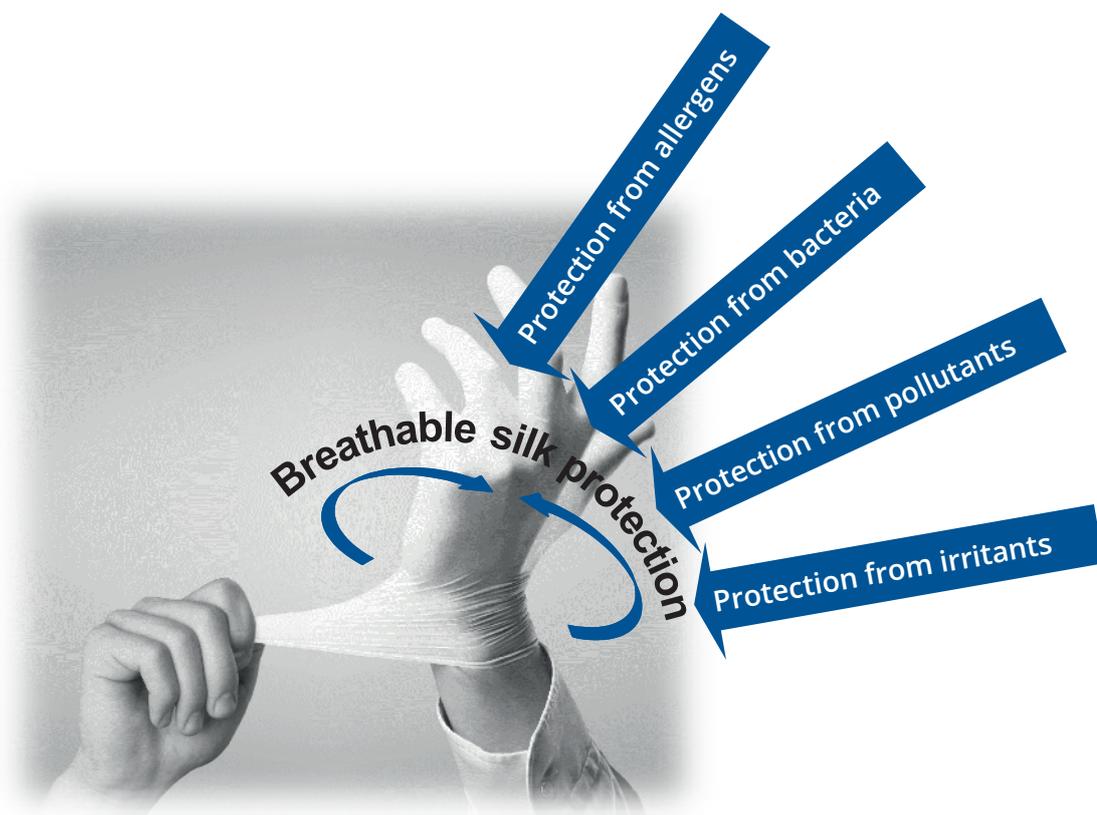


- Moisturiser
- Wrinkles optically softened
- Oil/sebum-absorbing, mattifying effect
- Silky skin sensation
- Minimises "stickiness" of formulation

#### Silkgel



- Forms a 3D, breathable, non-occlusive protective film on the skin
- Moisturising
- Lends a silky glow on application
- Supports formulation stability



### Benefits

- The breathable silk film affords effective protection and is like a “STOP” sign for environmental influences, pollution, micro-organisms and irritants. Confirmed by many in-vivo and in-vitro studies.
- The silk film is long lasting, not sticky, smooth to the touch and exceptionally skin-friendly.
- The physical barrier is immediately functional on application and supports skin regeneration.

### Application areas

- Hair care
- Decorative cosmetics
- Detox and skin shield products
- Skin care
- Sprays, emulsions and gels

For more details ask your RAHN team or visit [www.amsilk.com](http://www.amsilk.com).

# Second “Formulation Technology Seminar” in England ...

Our second “Formulation Technology Seminar” was held in England at the beginning of the year.

Along with our Japanese sales partner Ajinomoto, we provided our customers in the South and North of England with insights into the topic of “Rinse off” in both theory and practice.

Thank you to all participants and contributors for two fascinating and informative days.



# Towards a summer

## without stretch marks

Fast weight gain, pregnancy or even body-building can leave men and women with unsightly stretch marks. The dermis loses density when exposed to constant overstretching. The consequent lack of collagen and other matrix proteins results in red-blue veins. Stretch marks not only reduce skin elasticity and firmness, they can also affect the sufferer's self-confidence.

RAHN banishes stretch marks and has developed **treatment with 3% LIFTONIN®-XPRT**:



St	Substance	INCI name USA	% w/w	Manufacturer
1	Water demin.	Water	59.85	several
	Glycerin 85 %	Glycerin, Water	3.00	several
2	Tego Carbomer 340 FD	Carbomer	0.20	Evonik Industries AG, DE
3	Keltrol CG-SFT	Xanthan Gum	0.20	CP Kelco, US
	Tego Alkanol 6855	Cetearyl Alcohol	3.00	Evonik Industries AG, DE
	Dermofeel® GSC	Glyceryl Stearate Citrate	3.50	Dr. Straetmans, DE
	Amisoft HS-11P(F)	Sodium Stearoyl Glutamate	0.30	Ajinomoto, JP
	Tegosoft CI	Cetearyl Isononanoate	7.00	Evonik Industries AG, DE
	Dermosoft® OMP	Methylpropanediol, Caprylyl Glycol, Phenylpropanol	4.00	Dr. Straetmans, DE
	Tegosoft CT	Caprylic/Capric Triglyceride	15.00	Evonik Industries AG, DE
	Dermofeel® Toco 70 non-GMO	Tocopherol, Helianthus Annuus (Sunflower) Seed Oil	0.10	Dr. Straetmans, DE
4	NaOH solution 10 %	Sodium Hydroxide, Water	0.60	several
5	LIFTONIN®-XPRT	Bulbine Frutescens Leaf Juice, Sodium Benzoate, Potassium Sorbate, Citric Acid	3.00	RAHN AG, CH
6	White Poetry	Fragrance	0.25	Aromatic Flavours & Fragrances Europe Ltd., GB

The rich O/W emulsion with excellent spreadability is ideal for daily application. It contains **Dermosoft® OMP**, a multifunctional ingredient with an outstanding anti-bacterial effect and **Dermofeel® GSC**, a natural anionic O/W emulsifier. **LIFTONIN®-XPRT** is the expert for dealing with stretch marks. The leaf sap of bulbine frutescens, a South African medical plant, ensures a long-lasting equilibrium between collagen synthesis and decomposition. The skin is improved by high quality collagen and stretch marks are visibly and verifiably reduced.

# Mild Luxury Cleansing:

from “Creamy, liquid Body Wash”  
to “Luxurious, rich Face Cleanser”



---

Glycine-based surfactants are attracting a lot of attention these days, for if used properly, their special properties create exciting sensory effects.

They induce a creamy richness in Body Wash formulations – as in the case of Dove Shower Cream, or are used to develop gentle Stubble Cleansing Creams, take for example L’Oreal. However even really rich Face Wash formulations can be produced according to the same principle – and in a cold manufacturing process at that.

Creaminess can thus be infinitely adjusted and a wide spectrum of textures developed – for bottle through to tube application.

The texturing secret lies in the formation of fine crystalline structures in the surfactant system. This is directly related to the solubility of the surfactant and the pH value. Due to the addition of glycerine, the recipe contains little water, thus reducing the solubility of the acyl glycinates. During the cooling process this results either in recrystallisation or, in the cold manufacturing process, flocculation triggered by pH displacement due to the addition of acid. In both cases a soft creamy consistency is the result. And now for the exciting part: this fantastic creamy sensation immediately turns into a foamy, fine-pored lather in contact with water for exceptionally gentle cleansing. The amino acid surfactants are also ultra-mild and do not dry out the skin at all.

The best foaming behaviour is achieved with a pH value of approx. 6.5–7.0. If the pH value is reduced, although creaminess is intensified, foam volume is impaired. However this could be controlled by adding a co-surfactant to increase it again.

Two liquid glycinate surfactants are currently available:

- **Amilite GCS-12K**, a high-purity sodium cocoyl glycinate as 30 % aqueous solution
- **Amilite GCK-12H**, a potassium cocoyl glycinate & potassium cocoate as 30 % solution

While pure sodium salt is less soluble and thus produces an intensive creaminess, potassium salt is the more cost-effective solution for a lighter creaminess.

Below are some formulation and market examples listed in order of increasing creaminess and viscosity:

- Body Wash "Pearl" DB-SW-15A-FA
- Facial Cleanser "Cream" YSF-73-6
- Facial Cleanser "Cream" NCF-329CP

#### Body Wash "Pearl" DB-SW-15A-FA

	(wt %)	
<b>A</b> SODIUM LAURETH SULFATE (70 %)	7.20	Primary cleansing surfactant
<b>AMILITE GCK-12H (30 %)</b>	<b>10.00</b>	Foam booster, texturizer
SODIUM COCOYL ISETHIONATE	3.30	Co-surfactant
GLYCERINE	1.00	Moisturizer
SODIUM CHLORIDE	1.00	Viscosity modifier
PRESERVATIVE	q.s.	
WATER	balance	
<b>B</b> HYDROXYPROPYL STARCH PHOSPHATE	5.00	Thickening polymer
<b>C</b> PETROLATUM	5.00	Emollient
<b>D</b> COCAMIDOPROPYL BETAINE (30 %)	17.00	Co-surfactant
<b>E</b> CITRIC ACID (20 % aq.)	0.40	pH adjustment
<b>F</b> FRAGRANCE	q.s.	
	100.00	

- 1 Dissolve part A at 70 ~ 80 °C while stirring.
- 2 Add part B to part A and mix well.
- 3 Add part C while stirring.
- 4 After dissolving, add part D while stirring.
- 5 Cool down to 45°C, add part E to adjust the pH to 7.0.
- 6 Add part F and cool down to room temperature while stirring.



## Facial Cleanser "Cream" YSF-73-6

		(wt %)	
<b>A</b>	PEG-14M	0.5	Viscosity modifier
	WATER	9.5	
<b>B</b>	<b>AMILITE GCK-12H (30 %)</b>	<b>33.0</b>	Cleansing surfactant
	SODIUM LAUROAMPHOACETATE (30 %)	3.0	Co-surfactant
	LAURAMIDOPROPYL BETAINE (30 %)	6.0	Co-surfactant
	PRESERVATIVE	q.s.	
	WATER	balance	
<b>C</b>	HYDROXYPROPYL STARCH PHOSPHATE	2.0	Thickening polymer
<b>D</b>	ACRYLATES COPOLYMER (30 %)	2.0	Thickening polymer
	ACRYLATES/VINYL NEODECANOATE CROSSPOLYMER (29 %)	3.0	Thickening polymer
	WATER	5.0	
<b>E</b>	TITANIUM DIOXIDE	0.3	Opacifier
<b>F</b>	CITRIC ACID (20 %)	1.0	pH adjuster
<b>G</b>	FRAGRANCE	q.s.	
		100.0	

- 1 Prepare each part A and part D.
- 2 Dissolve part B at 80 degrees while stirring.
- 3 Add part A to part B at 80 degrees while stirring.
- 4 Add part C to part A + B slowly while stirring.
- 5 Add part D and disperse until uniform.
- 6 Add part E and disperse until uniform.
- 7 Add part F. Adjust the pH to 6.8.
- 8 Cool down to 40 degrees with gentle stirring, add part G.
- 9 Cool down to room temperature with gentle stirring.

## Facial Cleanser "Cream" NCF-329CP

		(wt %)	
<b>A</b>	<b>AMILITE GCS-12K (30 %)</b>	<b>33.0</b>	Cleansing surfactant
<b>B</b>	Xanthan Gum	0.1	Thickening polymer
	WATER	Balance	
<b>C</b>	GLYCERIN	10.0	Solvent, viscosity modifier
	DECYL GLUCOSIDE (50 %)	2.0	Thickening polymer
	SODIUM CITRATE (20 %)	2.5	pH adjuster
	PRESERVATIVE	q.s.	
<b>D</b>	LAURAMIDOPROPYL BETAINE (30 %)	13.0	Co-surfactant
	CITRIC ACID	1.4	pH adjuster
<b>E</b>	GLYCERIN	25.0	Solvent, viscosity modifier
<b>F</b>	FRAGRANCE	q.s.	
		100.0	

- 1 Disperse Xanthan gum into water at room temperature to prepare part B.
- 2 Add part C to part B while stirring.
- 3 Add part A to part B while stirring.
- 4 Mix part D at room temperature.
- 5 Add part E to part D while stirring.
- 6 Add part D to part B gradually with gentle stirring.
- 7 Add part F.

# Argan oil – beauty care from Morocco

---

Argan oil (*Argania Spinosa Kernel Oil*) is probably the most exclusive oil on Earth. It is pressed from the kernels of the yellow fruit of the argan tree. The argan tree belongs to the sapotaceae family native to the north of the Sahara, in Southwest Morocco. The region is also known as “Arganeraie” and was declared a Biosphere Reserve by UNESCO in 1998. The argan tree plays a key ecological role due to its high resistance to aridity and drought. Berber tribes also call it the “Tree of Life”. It provides people with timber for building, fuel, food and oil as a valuable nutrient.

The tree's fruit is protected by thousands of thorns from man and animal, with the exception of Arabian camels, which can eat the thorns thanks to their tough skin and goats, which in the course of evolution, have learned to scale the trees and eat the leaves and fruit of the trees.

A popular tale is told about the Berbers of old, who let their goats climb the trees to eat the ripe fruit at harvest time. The fruit was digested by the animals, however the kernels, which are indigestible, were eventually passed by the goats. The argan kernels were then collected and pressed into oil. Argan oil from passed kernels is even deemed to be particularly effective. Different stories come to us from a variety of sources so it is difficult to verify the veracity of these myths. Nowadays, at any rate, production is subject to rigorous regulations and hygiene controls.



Argan fruit is harvested between July and September. The traditional method of production is very labour-intensive and time-consuming, performed exclusively by Berber women. Once harvested, the fruit is dried on the flat rooftops of the mull-walled houses. The peel is removed and then the shell, which is 12 times harder than that of a hazelnut, is cracked. The roasted or unroasted kernels (depending on the purpose) are stone ground by hand and stirred into a creamy mash with hot water. Constant kneading results in an oily emulsion and after around 30 minutes the argan oil gradually separates from the paste and can be carefully skimmed off.

Argan oil has a nutty flavour and is a relatively expensive edible oil. The yield is minimal. Around 4–6 kg of fruit is harvested per

argan tree and approx. 30 kg of fruit is needed to make one litre of argan oil, or the equivalent of five to seven trees. Considering the intensive labour also involved, the higher price of argan oil compared to conventional oils is justified.

Meanwhile industrial oil presses are used, which greatly facilitates handling and extraction of the oil. The oil yield is also higher, as maximum oil is extracted from the small argan kernels under high pressure and heat.

In November 2014 Unesco decided to admit the argan tree and the traditional method of producing argan oil by original hand-pressing into its "Lists of *Intangible Cultural Heritage and Register of Best Safeguarding Practices*".



Beside the food sector, argan oil is also used in cosmetics. It contains a rich concentration of essential fatty acids like olein, palmitine and linoleic fatty acids, which are important sources for keeping skin and hair cells adequately moisturised. The oil is therefore excellent for dry, mature or stressed skin. Argan oil is also rich in tocopherol and polyphenols, which have an anti-oxidative, cell-protecting effect.

Traditionally the oil is also used for medicinal purposes, such as treating stomach and digestive problems, heart and circulatory ailments and also sunburn, acne, neurodermitis or to disinfect wounds.

As idea for a new product application: Why not combine the anti-oxidative effect of argan oil with the regenerative properties of LIFTONIN®-XPRT?

LIFTONIN®-XPRT influences collagen synthesis in the skin and thus regenerates the connective tissue damaged by tattooing, leading to faster skin soothing and improved settling of the tattoo ink.

Try our irresistible [Tattoo Aftercare Cream ...](#)



St	Substance	INCI name USA	% w/w	Manufacturer
1	Water demin.	Water	72.05	several
	Glycerin 85 %	Glycerin, Water	3.00	several
	Keltrol CG-SFT	Xanthan Gum	0.25	CP Kelco, US
2	Tegin M Pellets	Glyceryl Stearate	2.00	Evonik Industries AG, DE
	Amisoft HS-11P(F)	Sodium Stearoyl Glutamate	0.20	Ajinomoto, JP
	Tego Alkanol 6855	Cetearyl Alcohol	2.00	Evonik Industries AG, DE
	Axol C62 Pellets	Glyceryl Stearate Citrate	1.50	Evonik Industries AG, DE
	Argan Oil, organic	Argania Spinosa Kernel Oil	6.00	All Organic Trading GmbH, DE
	Dermofeel Sensolv	Isoamyl Laurate	2.00	Dr. Straetmans, DE
	Dermofeel MT 70 non-GMO	Tocopherol, Helianthus Annuus (Sunflower) Seed Oil	0.20	Dr. Straetmans, DE
Dermosoft OMP	Methylpropanediol, Caprylyl Glycol, Phenylpropanol	4.00	Dr. Straetmans, DE	
3	L-Arginine solution 10 %	Water, Arginine	1.80	Ajinomoto, JP
4	LIFTONIN®-XPRT	Bulbine Frutescens Leaf Juice, Sodium Benzoate, Potassium Sorbate, Citric Acid	3.00	RAHN AG, CH
5	Cosmospheres Argan Beads 1-M	Lactose, Microcrystalline Cellulose, Argania Spinosa Kernel Oil, Mica, Polyisobutene, CI 77891, CI 77491, CI 11680	2.00	Spirig Pharma AG, CH

## TIPP

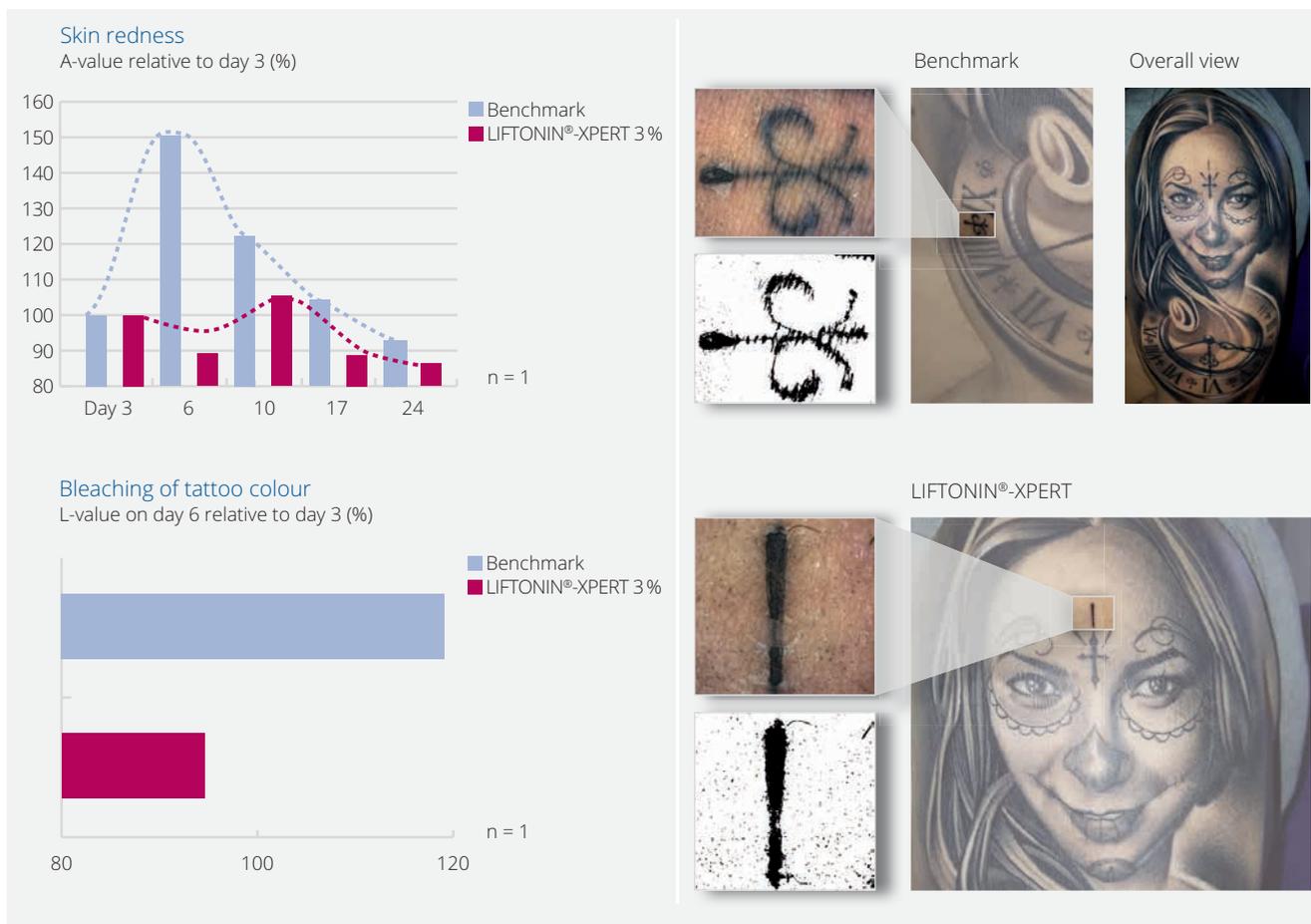
Are you looking for something to impart your product with an individual note? How about the new Cosmospheres Argan Beads ...



Learn more about the effect of Liftonin®-XPRT for tattoo after-care on the following page ...

# LIFTONIN<sup>®</sup>-XPERT is ideal as tattoo aftercare (anecdotal *in-vivo* study)

<b>Test design</b>	Anecdotal, benchmark compared <i>in-vivo</i> application study
<b>Test subjects</b>	1 male subject, Caucasian skin with fresh tattoo, 35 years.
<b>Test formulations</b>	Emulsion containing 3% LIFTONIN <sup>®</sup> -XPERT. High-class hydrating skin care product (benchmark)
<b>Application area / period / frequency</b>	Left upper arm / 24 days, starting one day after tattooing / twice daily; last application 8–12 hours before measurement.
<b>Primary endpoints</b>	<b>Skin reddening:</b> Evaluation of a-value (Skin Colorimeter) <b>Intensity of tattoo ink:</b> Evaluation of L-value (Skin Colorimeter)
<b>Secondary end points</b>	Detailed photographic images for illustrative purposes.



Less redness and better occurrence of the color on freshly tattooed skin – thanks to Liftonin<sup>®</sup>-XPERT

If you have further questions or you need more details please ask your RAHN team.

# Hair care – how to get it right!

Shocking pink or gloriously curly, no matter what your hair looks like – the most important criteria for beautiful hair are health and grooming. Depending on their hairstyle, a person can be seen as respectable, creative or also in a negative light. Dull, dingy or brittle hair is often perceived as unkempt and

unhealthy. Like skin, the condition of hair reflects health and vitality. Proper care is vital to keep hair healthy and beautiful.

We have compiled a little guide to the various types of hair, their qualities and practical care tips:

## Coloured hair



### Properties

Regular colouring dries out hair. It looks brittle, dull and dingy.

### Care tip

Tinting stresses our hair. This is caused by the colourants such as ammonia and hydrogen peroxide. Ammonia swells hair fibres so they can absorb the pigments, so a care product that smooths the surface of the hair and restores its former brilliance is essential.

### RAHN tip

- Prodew 500 preserves colour brilliance
- Eldew PS-203R improves the hydrophobicity of the hair surface

## Curly hair



### Properties

Naturally curly or wavy hair usually dries quickly and is porous. Curls don't lie quite so close to the scalp as straight hair, so natural curls and waves are supplied with less sebum, which gives hair its softness and silkiness. The curves of natural curls often break the cuticle layer, allowing external influences to penetrate the hair and cause damage in the long term.

### Care tip

Due to its special structure, curly hair should be washed with rich moisturising shampoo. Oily nourishing hair repair kits can have a negative effect on flowing locks – settling on the individual strands and making them lose their natural bounce.

### RAHN tip

- Ajidew NL-50 improves untangling and makes hair easy to comb
- AQUARICH® provides long-lasting moisturising

### Fine hair



#### Properties

Fine hair is delicate and needs very special care. As it generally lies closer to the scalp, it soon looks greasy and limp, so has to be washed more often.

#### Care tip

Volumising products are ideal for fine hair to make it look thicker, while avoiding weighing it down. Frequent washing strips the scalp of natural oils, resulting in increased sebum production, which in turn makes hair greasy again. Mild shampoos are therefore recommended.

#### RAHN tip

- Pro dew 500 nourishes hair and give it a glossy look
- Aloe vera gel nourishes the hair without weighing it down

### Stressed hair



#### Properties

There are many causes of stressed hair. In most cases, external influences like hair-dryer heat, styling tools and also environmental conditions result in damage. Hair tends to be dry, brittle and vulnerable to split ends.

#### Care tip

Special care products with rich substances help in this case. These substances build up hair from the inside; they leave hair looking well-groomed and shiny. Application of a conditioner is recommended after washing. It moisturises and makes hair easier to comb. Styling with hair-dryers, curling tongs or straightening irons should be avoided. Heat radiating from these devices damages the hair and soon results in hair fracture.

#### RAHN tip

- Eldew PS-203R for repair & moisture control
- AQUARICH® moisturises and regenerates hair
- Pro dew 500 for nutrition & shine

## Long hair



### Properties

Long hair often looks lank and dull; it lacks shine and silkiness. Long hair also rubs against skin and clothing or rests on shoulders, so often tends to be drier and thinner towards the ends and more prone to split ends.

### Care tip

Nourishing boosting care products, like conditioners are required. They nourish hair and moisturise. If long hair is split at the ends into two or several fibres, the only solution is to cut it off. Regular use of a special fluid for hair ends or hair oil helps prevent this in the first place and regular trimming keeps hair looking fresh.

### RAHN tip

- AQUARICH® for hair moisturising and regeneration
- Ajidew NL-50 makes it easier to comb hair
- Aloe vera gel nourishes the hair without weighing it down

## Haar Grey / mature hair



### Properties

The older we get, the more the structure of our hair changes; it loses vitality due to the decline in the natural production of keratin. Hair becomes thinner, drier and often looks dull and bristly.

### Care tip

Grey/mature hair needs a lot of care. Special repair kits, leave-in conditioners and shampoos can improve hair structure and smooth damaged areas. External influences like the sun or chlorine water can leave grey hair looking yellowish. Due care should be taken in these cases.

### RAHN tip

- Ajidew NL-50 for hair moisturising and smoothing
- L-Arginine to stimulate and nurture hair roots

Please contact your RAHN team for more details and concept ideas.

# The Cosmetic

## Encyclopaedia

# E

for ...

...EDTA

...Eczema

...Elastin

...Emollient

...Emulsifiers

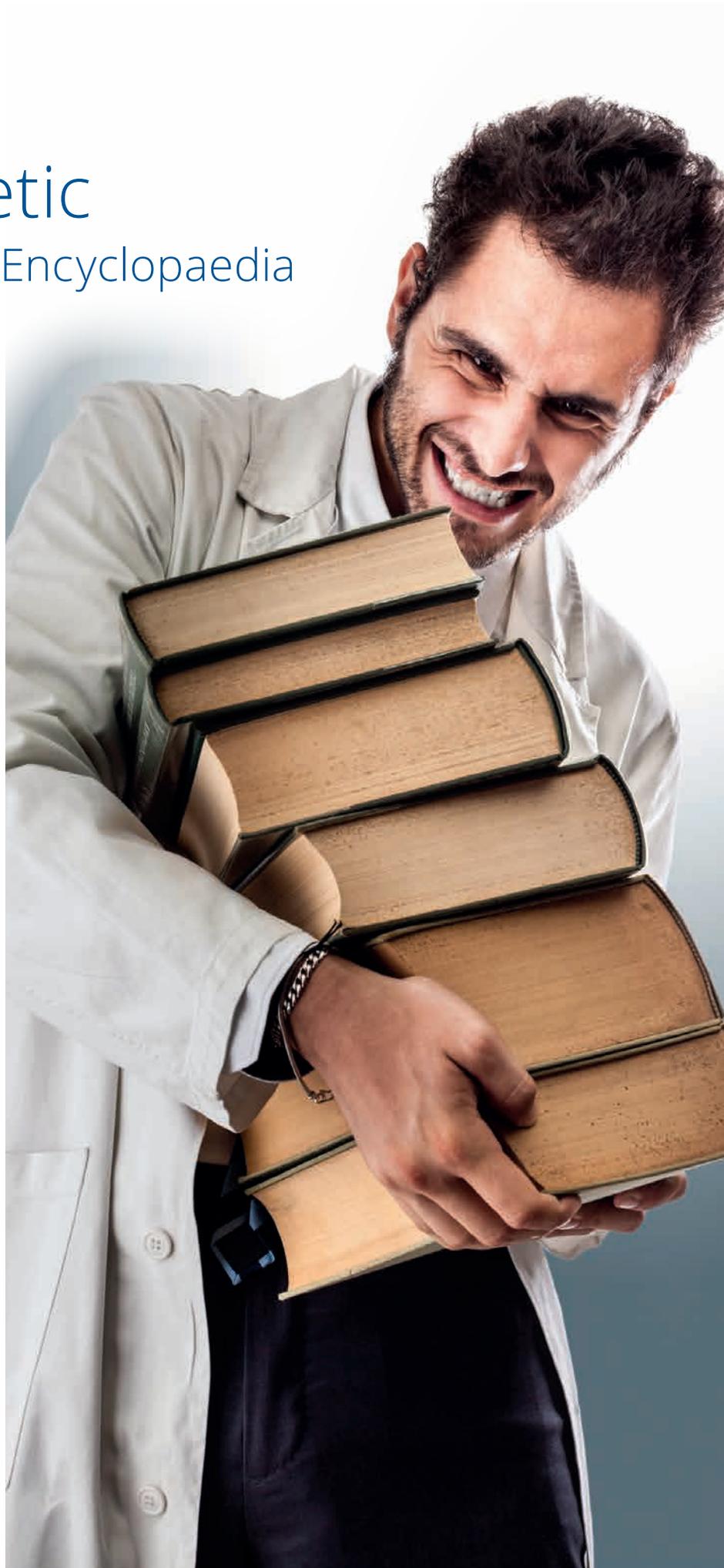
...Emulsion

...Enzyme

...Epidermis

...Escherichia coli

...Ethanol



## EDTA

EDTA, or ethylene diamintetraacetic acid is a chelating agent. Traces of metal can have an disruptive effect on a formulation, e.g. resulting in changes in colour or smell. Chelating agents are substances that bond easily with these ions. Once bound, the ions are withdrawn from the reaction milieu and can no longer act as catalysts for oxidation by oxygen.

## Eczema

Eczema is a term that describes a group of inflamed, generally itchy non-contagious skin diseases. Various symptoms are possible depending on type, cause and phase, such as redness, swelling, vesicles and dry skin. In chronic stages patchy, cracked or scaly skin is frequently observed.

## Elastin

Elastin is a protein that forms fibres in connective tissue. Once stretched, elastin returns to its original shape after being stretched. Elastin is essential for the function of many types of tissue.

## Emollient

Emollients are often termed as “softeners”. These include, for instance, light ester oils, which are used in cosmetics to improve the sensation of a cream on the skin.

## Emulsifiers

Emulsifiers are very useful when it comes to combining fatty and watery substances. Depending on the structure of the emulsifier, different emulsion types are formed such as oil-in-water (O/W) or water-in-oil (W/O) emulsions. In cosmetics they are mainly used to produce creams, lotions and sprays.

## Emulsion

An emulsion consists of at least two liquids that are immiscible. Emulsions are two- or multi-phase preparations, with one phase (the dispersed phase) being dispersed in the other continuous phase. One of the two phases is hydrophilic (= “water-loving”), the other lipophilic (= “fat-loving”). The main constituent of the hydrophilic phase is generally water or a liquid miscible with water. The lipophilic part of an emulsion can be fats, oils or other organic liquids. A basic distinction is made between the following emulsion types: oil-in-water emulsion (O/W); water-in-oil emulsion (W/O); water-in-oil-in-water emulsion (W/O/W) and oil-in-water-in-oil emulsion (O/W/O).

## Enzyme

Enzymes are biochemical catalysts that help to split or otherwise change a substance. Enzymes are responsible for virtually all chemical reactions in the human body. There are many different kinds of enzyme. However all contain elements of protein and are generally very complex in structure. As a result they are very sensitive and can be quickly deactivated when exposed to higher temperatures or the influence of e.g. acids, alkalines, oxidation agents and surfactants. Fascinatingly, enzymes are used specifically nowadays in modern cosmetics.

## Epidermis

The term epidermis refers to the outermost layer of our skin. It protects the body from the environment and is composed of five further layers.

## Escherichia coli

Escherichia coli (or E. coli for short) is a Gram-negative, acid-forming, rod-shaped bacterium commonly found in the intestine of humans and animals.

## Ethanol

Ethanol is a clear, colourless, highly flammable hygroscopic liquid with a spicy aroma and burning taste. It is commonly used in cosmetics as a solvent and natural preservative. Odourless ethanol is mainly used as a carrier in perfumery.

RAHN GmbH  
Hahnstrasse 70  
DE-60528 Frankfurt am Main  
Tel. 0800 1 816 015  
Fax 0800 1 816 016

RAHN (UK) Ltd.  
55 Baker Street  
GB-London  
W1U 7EU  
Tel. 0800 0 323 743  
Fax 0800 0 323 744

RAHN France Sarl  
91 rue de Faubourg Saint-Honoré  
FR-75008 Paris  
Tel. 0800 913023  
Fax 0800 918268

RAHN USA Corp.  
1005 North Commons Drive  
Aurora, Illinois 60504, USA  
Tel. +1 630 851 4220  
Fax +1 630 851 4863

RAHN Trading (Shanghai) Co. LTD  
Room 105, Building 1  
3669 Jin Du Road  
Shanghai Xinzhuang Industry Park  
Shanghai 201108  
P.R. of China

Tel. +86 21 5442 8871  
Fax +86 21 5442 8879

cosmetics@rahn-group.com  
www.rahn-group.com



**RAHN AG**

Dörflistrasse 120  
CH-8050 Zürich  
Tel. +41 44 315 42 00  
Fax +41 44 315 42 45

**DISCLAIMER**

Utilisation of this document or parts thereof as well as product names for commercial or industrial applications is subject to explicit written approval by RAHN AG. This information is based on our own experience to date and we believe it to be reliable. It is intended only as a guide to use at your discretion and risk. We cannot guarantee favourable results and assume no liability in connection with its use, or the use of the methods or products described. None of this information is to be taken as a license to operate under, or a recommendation to infringe patents.

