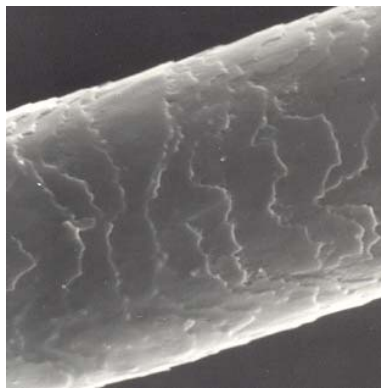


Lucas Meyer



EFFECT OF AMISOL[®] TRIO IN HAIR CARE PREPARATIONS



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TABLE OF CONTENT

SUMMARY	3
TREATING PROPERTIES OF AMISOL® TRIO.....	4
TECHNICAL BENEFITS OF AMISOL® TRIO.....	5
LECITHIN FOR SHAMPOOS AND CONDITIONERS	6
DEMONSTRATION OF THE PROTECTIVE ACTION OF AMISOL® TRIO	6
AN ANTI-IRRITANT ACTION IN CASE OF CHEMICAL AGGRESSION	7
EFFECT OF AMISOL® TRIO IN SHAMPOOS.....	8
EFFECT OF AMISOL® TRIO IN CONDITIONERS	10
EXAMPLES OF FINISHED TOILETRIES PRODUCTS CONTAINING PHOSPHOLIPIDS	12
REFERENCES	12

SUMMARY

Membrane lipids exhibit many advantages in skin care but also in hair care preparations: they combine technological properties with hair treating effects. They are natural emulsifiers, solubilisers, wetting agents, important source of essential fatty acids, hydrating and reffatening agents.

Lucas Meyer Cosmetics supplies natural membrane lipids from soya, egg or milk in the EMULMETIK range. In addition, we have developed a special range of liquid raw materials – the AMISOL's – specifically dedicated to hair care preparations.

AMISOL® TRIO contains useful molecules such as phospholipids, glycolipids and phytosterols having hair treating benefits. Moreover, AMISOL® TRIO has technical properties : opacifying, emulsifying, ...

Washing efficacy was firstly investigated. It was shown by experiments that AMISOL® TRIO in shampoo formulations does not decrease cleansing efficacy. Moreover, results showed that shampoos containing AMISOL® TRIO improved brightness, suppleness and softness of the hair.

Experiments demonstrated that AMISOL® TRIO has a very significant positive effect in conditioning preparations. Even in rinsed products, most of the important characteristics of hair were improved by 50 to 105 %: volume, brightness, softness, curling and fixing.

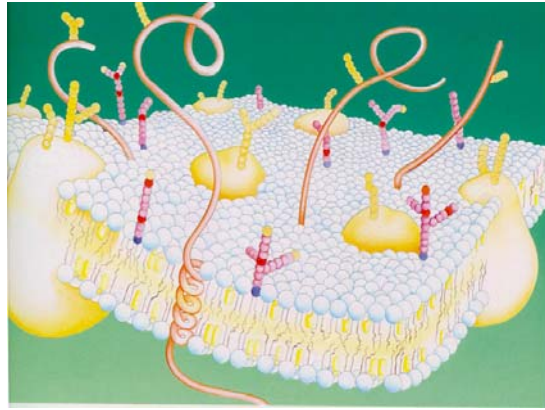
In conclusion, AMISOL® TRIO plays a major role in hair care preparations to improve brightness, softness, volume and the general aspect.

It is also a useful technical agent: natural opacifier and emulsifier.

Finally, AMISOL® TRIO has film forming properties that consumer can feel giving your formulation immediate benefit.

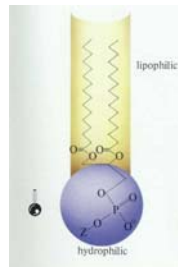
TREATING PROPERTIES OF AMISOL® TRIO

AMISOL® TRIO is extracted from soya bean. It contains Phospholipids, Glycolipids, Phytosterols and Vitamin F and constitutes a natural source of these essential components present in all living cells. They form the membrane of each single cell regulating their optimal activity.



Membrane lipids actively contribute to the long-term efficacy of skin and hair care products. They offer care and protection and have superfatting properties. They also improve the moisture balance.

Thanks to the bioaffinity between membrane lipids and the cell membranes, AMISOL® TRIO adheres to the skin and hair surface. It leaves a pleasant and soft feeling specifically non-tacky and non-greasy. This is the famous “phospholipids touch”.



AMISOL® TRIO is a completely safe raw material that does not generate any dermatological or toxicological problems.



AMISOL® TRIO is biodegradable and environment-friendly. It is fully accepted in all countries and regulations. It is obtained from renewable sources.

AMISOL® TRIO exhibits the following benefits for hair care:

1. Film former
 - Reduces fly-away and split-ends of keratin fibers
 - Prevents from external physico-chemical damages
 - Improves softness, without accumulating effect
2. Hair/Scalp penetration
 - Repairs damaged and dried hair
 - Restores lipid fractions
 - Calms scalp irritation/itching
3. High conditioning effects
 - Brightness : +92%
 - Combing : +72%
 - Suppleness : +73%
 - Softness : +67%

TECHNICAL BENEFITS OF AMISOL® TRIO

1. Non-ionic emulsifier
 - oil stabilization in cleansing/foaming formulations
 - cleansing improvements



Oil stabilisation - * 30 000

This non-ionic emulsifier can be used as a primary emulsifier or as a co-emulsifier in combination with other surface-active substances.

2. Opacifier
 - creamy foaming formulations
3. Film former
 - leaves a soft skin/hair after feel

LECITHIN FOR SHAMPOOS AND CONDITIONERS

Shampoos and hair conditioners with "egg" or lecithin additives account for a substantial share of the market in the USA, for example approx. 15% in 1991. The old, "natural", practice of rubbing egg-yolk into the hair after washing it has now been replaced by the more elegant method of using conditioning shampoos or rinses or hair-conditioning preparations containing lecithin: this gives the hair pleasant skin feel, surface gloss and distinctly improved combing properties when wet and dry, as phospholipids from shampoos and conditioners are taken up well on hair.

DEMONSTRATION OF THE PROTECTIVE ACTION OF AMISOL® TRIO

Aim: To determine the capacity of AMISOL® TRIO to restore the barrier function

Product tested: an aqueous gel containing 1.5% AMISOL® TRIO

Principle: Method of transepidermal water loss after delipidation of the skin. Measure of the TEWL using a TEWAMETER™210 in a controlled atmosphere after delipidation by stripping.

The stripping degrades the cutaneous barrier, water evaporates by simple diffusion and the TEWL values are raised.

A protective product makes it possible to retain water in the stratum corneum by restoring the barrier and thus lowers the TEWL values previously obtained. The product tested is compared with a control site, damaged but not treated.

Method:

Study of 10 volunteers with dry skin:

1. Measurement of the TEWL on each skin site.
2. Each forearm is stripped 15 times with D. Squam adhesive tape
3. Application of gel containing AMISOL® TRIO on the site to be treated. Measurement of the TEWL at T=1 hour after application.

Results:

AMISOL® TRIO 1.5% gel banished dry skin in a single application for 100% of damaged skins.

No signs of skin irritancy were experienced.

The results demonstrate the film-forming protective action of AMISOL® TRIO:

The TEWL was down by -13%, 1 hour after the application of AMISOL® TRIO

AMISOL® TRIO provides a protective film against external attacks.

AN ANTI-IRRITANT ACTION IN CASE OF CHEMICAL AGGRESSION

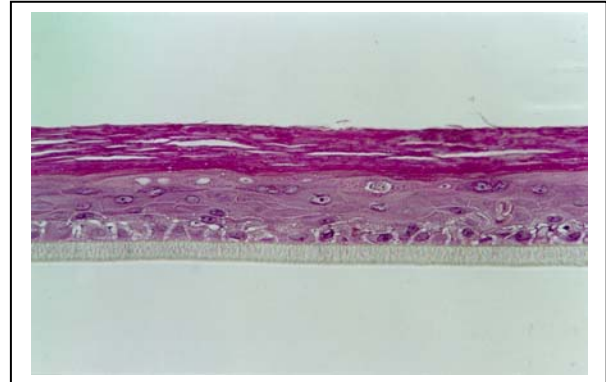
AMISOL[®] TRIO is able to neutralize the irritation caused by applying an irritant molecule to the skin (Sodium Dodecyl Sulphate) more than **90%**.

It instantly soothes the cutaneous lesions provoked by SDS. The damaged epidermal structure regains its health (see photo below).

Reconstructed epidermis treated with SDS (0.1%)



Without protective treatment



With **AMISOL[®] TRIO**

EFFECT OF AMISOL® TRIO IN SHAMPOOS

Laboratory where tests were performed:

Laboratoire DERMSCAN, Centre d'entreprise et d'innovation, 69603 Villeurbanne cedex, France
Project N° 96221

Goal of the experiment:

The goal of the experiment was to compare two shampoo formulations – one of them contained AMISOL® TRIO.

Principle of the test:

10 volunteers tested the products (treatment and placebo) at the same time (half head). The hair was washed with the shampoos described in following table. Hair was then dried naturally. All parameters were evaluated by specialized technicians and by the volunteers themselves. General aspect was evaluated on a scale of 5 or 10 points.

Tested formulations:

INGREDIENTS	REFERENCE	SHAMPOO WITH AMISOL® TRIO
TEXAPON N40 (Sidobre sinnova)	20 %	20 %
Preservative (Bronidox L 40, Henkel)	0.2 %	0.2 %
AMISOL® TRIO	-	3 %
NaCl	6 %	6 %
Water	up to 100	up to 100

Results:

1) Cleansing effect

	REFERENCE	SHAMPOO WITH AMISOL® TRIO
Evaluation	5.0 +/- 0.0	4.8 +/- 0.2
Conclusion	Excellent	Excellent

(Scale: 0 to 5)

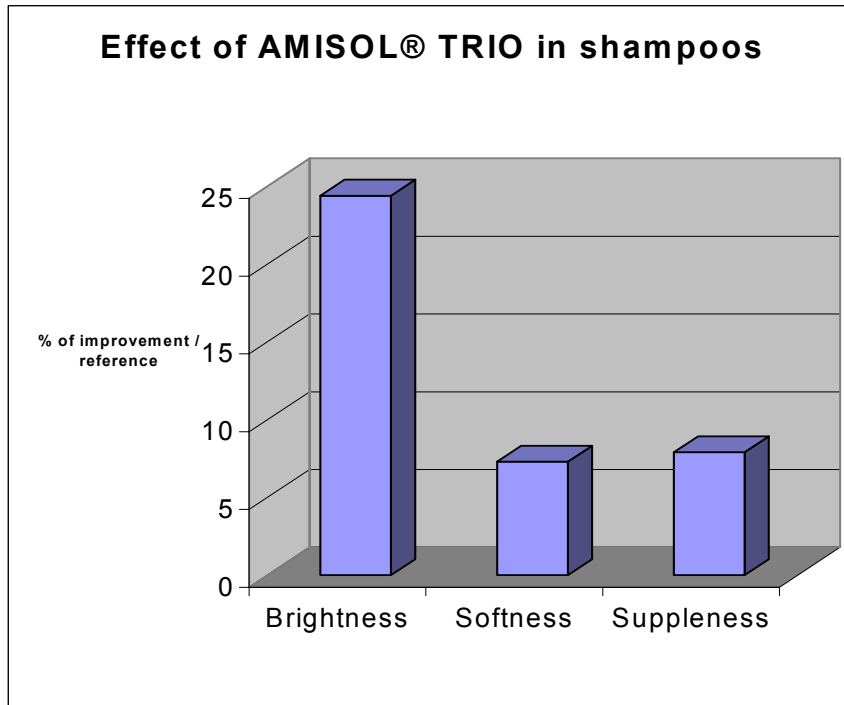
2) General aspect of hair

	REFERENCE	SHAMPOO WITH AMISOL® TRIO
Evaluation	2.6 +/- 0.4	3.2 +/- 0.5
Conclusion	Excellent	Excellent

(Scale: 0 to 5)

3) Effect on the separate parameters

Results are expressed compared to the reference, i.e only improvement due to phospholipids compared to the reference is reported on the following graph.



This data showed the advantage of AMISOL® TRIO compared to the reference:

- Brightness: + 25 %
- Softness: +7%
- Suppleness: +8 %

EFFECT OF AMISOL® TRIO IN CONDITIONERS

Laboratory where tests were performed:

Laboratoire DERMSCAN, Centre d'entreprise et d'innovation, 69603 Villeurbanne cedex, France
Project N° 96221

Goal of the experiment:

The inherent property of phospholipids to form bilayer structures render them particularly useful in toiletries to form thin film on the hair surface. Moreover, phospholipids have a high affinity for hair.

The goal of the experiment was to compare two conditioning formulations – one of them contained AMISOL® TRIO – in order to evaluate the benefit of phospholipids and other membrane lipids.

Principle of the test:

10 volunteers tested the products (treatment and placebo) at the same time (half head). The hair was first washed with the reference shampoo described in the previous test. Then, the product was applied for 5 minutes and then rinsed. Hair was then dried naturally. All parameters were evaluated by specialized technicians and by the volunteers themselves. General aspect was evaluated on a scale of 5 or 10 points.

Tested formulations:

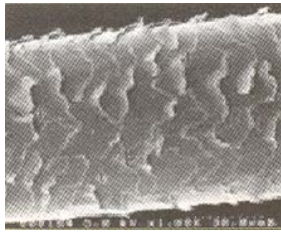
INGREDIENTS	REFERENCE	CONDITIONER WITH AMISOL® TRIO
PVP (Luviskol K90, BASF)	4 %	4 %
Preservative (Bronidox L 40, Henkel)	0.2 %	0.2 %
Phospholipids	-	3 %
Water	up to 100	up to 100

Results:

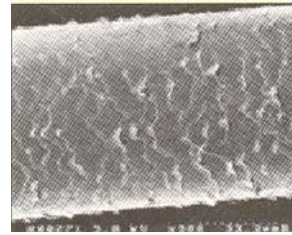
1) Restructuring effect of conditioners

	REFERENCE	CONDITIONER WITH AMISOL® TRIO
Evaluation	2.2 +/- 0.7	3.6 +/- 0.4
Conclusion	-	Significantly higher

2) Pictures of the hair before and after treatment with the phospholipids preparation:



Before treatment

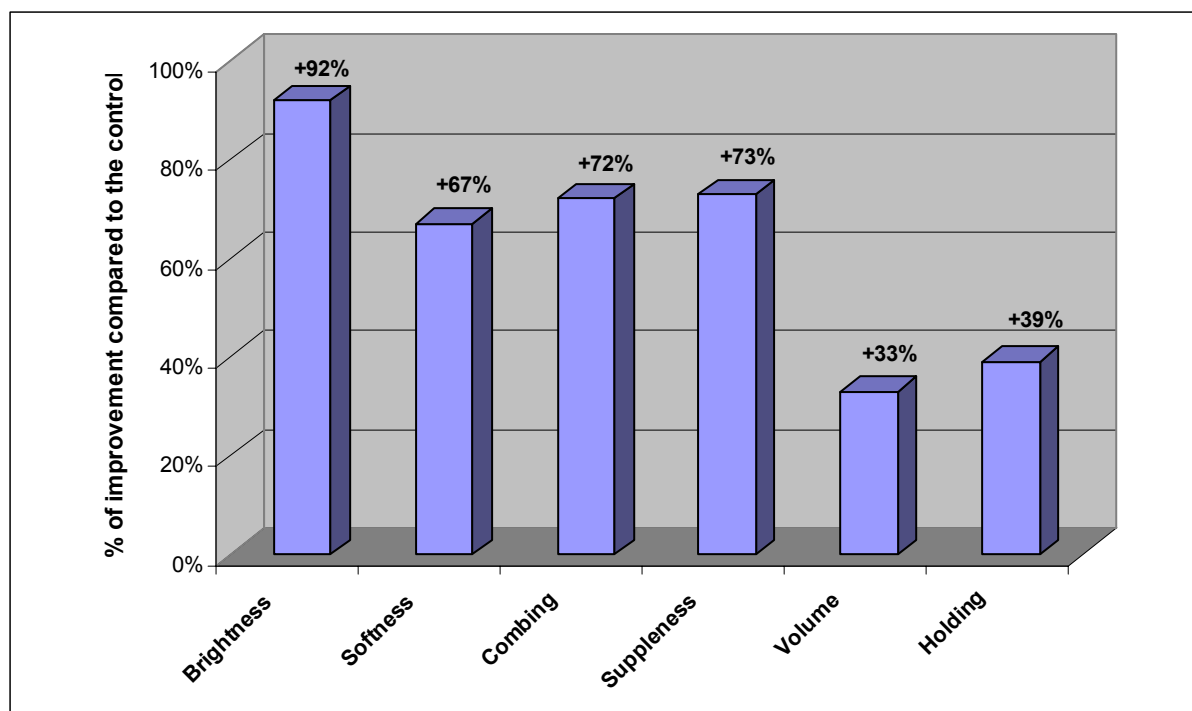


After treatment

Microscopical pictures show that conditioner containing AMISOL[®] TRIO smooths down the hair follicule. Cuticle scales are less visible and the hair is repaired.

3) Effect of AMISOL[®] TRIO on the different parameters

Results are expressed compared to the reference, i.e only improvement due to phospholipids compared to the reference is reported on the following graph.



Conclusion:

Although this test included a rinsing step, very significant results were obtained evaluated either by volunteers or technicians with AMISOL[®] TRIO. Particularly, the gaining effect was improved as it is reported in the literature. Indeed phospholipids tend to form films at the surface of skin or hair. This film forming effect as a smoothing effect that could be seen in this experiments (+65-68 %). Brightness and suppleness were also tremendously enhanced. Cumbability was also facilitated and higher volume and restructuring effects were observed because of the presence of phospholipids.

EXAMPLES OF FINISHED TOILETRIES PRODUCTS CONTAINING PHOSPHOLIPIDS



REFERENCES

Patent number US4314573

Process for conditioning hair

Publication date 1982-02-09

Abstract:

A process for conditioning hair is provided which comprises applying to the hair an alcohol-soluble fraction of soybean lecithin in solution in a lower alkanol having two or three carbon atoms, thereby lubricating the hair and facilitating combing, and at the same time reducing the accumulation of an electrostatic charge on the hair during combing, and thereby inhibiting fly-away.

Patent number CN1095587

Lecithin series cosmetics

Publication date 1994-11-30

Abstract:

Lecithin is added into existing cosmetics such as shampoo, hair conditioner, creams, and lotion to improve their cleaning, protecting and beautifying functions as the lecithin contains more nutrients to nourish and moisten hair and skin.

Patent number EP0019301

Process for conditioning hair

Publication date 1980-11-26

Abstract:

Composition for conditioning hair comprising an alcohol-soluble fraction of soybean lecithin in solution in a lower alkanol having two or three carbon atoms and the process for its application which comprises applying to the hair said composition thereby lubricating the hair and facilitating combing, and at the same time reducing the accumulation of an electrostatic charge on the hair during combing, and thereby inhibiting flyaway.

Patent number AU1706402

Novel use of phospholipids in hair treatment products

Publication date 2002-06-18

Abstract not available for AU1706402

Abstract of correspondent: **DE10060814**

Abstract:

The invention relates to a novel use of phospholipids which significantly improves the restructuring of fibers, especially keratin fibers, and the washfastness of keratin fibers.

Patent number GB2250998A

Cosmetic cleansing composition

Publication date 1992-06-24

Abstract:

The invention comprises a method for removing oily soil and make-up from the skin and hair, and optionally delivering a secondary benefit, involving treatment with a concentrated aqueous composition which is substantially free of non-polar oils which on subsequent dilution into water during rinsing generates liposomes.

Patent number WO 95/23578

Liposomes for deposition on hair

Publication date 1995-09-08

Abstract:

Process for the deposition, of an active ingredient on the hair by cationic liposomes, and post-wash conditioner or hair treatment masque compositions containing liposomes and an active ingredient.

PublicationCationic nanoparticles

Publication date April 1996 in DCI

By F. Zulli and F. Suter from Mibelle AG and by M. Birman from Croda Inc.

PublicationPhosphatidic acid has a potential to promote hair growth in vitro and in vivo, and activates mitogen-activated protein kinase/extracellular signal-regulated kinase in hair epithelial cells

Publication date 2003 in Journal of investigative dermatology Vol. 121, Num:3, P. 448-456

By T. Takahashi, A. Kamimura, T. Hamazono-Matsuoka and S. Honda