

emana[®]

Technology and innovation taking care of your body with comfort

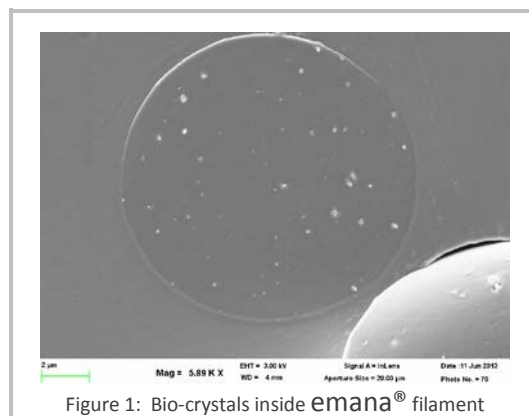
BENEFITS: reduction of cellulite appearance or orange peel, improvement of skin smoothness, increase of skin firmness and elasticity, collagen synthesis and skin microcirculation enhancement, in the same level of the best cosmetic creams in the market.

CHEMICAL COMPOSITION: Polyamide 6.6

PRESENTATION:

- YARN TYPES: DTY, ATY, FDY, Recovered Yarn
- TITER: 20 to 320 dtex (verify product catalog for more information)
- Full Dull Microfiber

CHARACTERISTICS: Polyamide 6.6 with mix of bio-crystals (Figure 1) embedded in the polymeric matrix, which offers everlasting effects and white color.



CERTIFICATIONS:

All emana[®] benefits are validated by several Clinical Tests performed by KOSMOSCIENCE Institute, independent and cosmetic specialized laboratory, following scientific protocols in double blind, paired and controlled experiments.

emana[®] is Oeko-tex[®] certified - Standard 100 Class 1 - guaranteeing there is no harmful or toxic substances for Human Being.

TEXTILE APPLICATIONS: shapewear, underwear, pantyhose, legging, jeans, others.

emana[®] mechanism:

emana[®] mechanism is simple to explain:

Human body emits energy all the time, while we are walking, sleeping, running, working and so on. This energy is emitted in the form of heat in order to make our body and metabolism work properly. The bioactive crystals inside emana[®] garment absorbs this heat and emits **Far Infrared rays** which will interact with the body, stimulating the blood microcirculation, leading to a better performance and to skin care benefits.

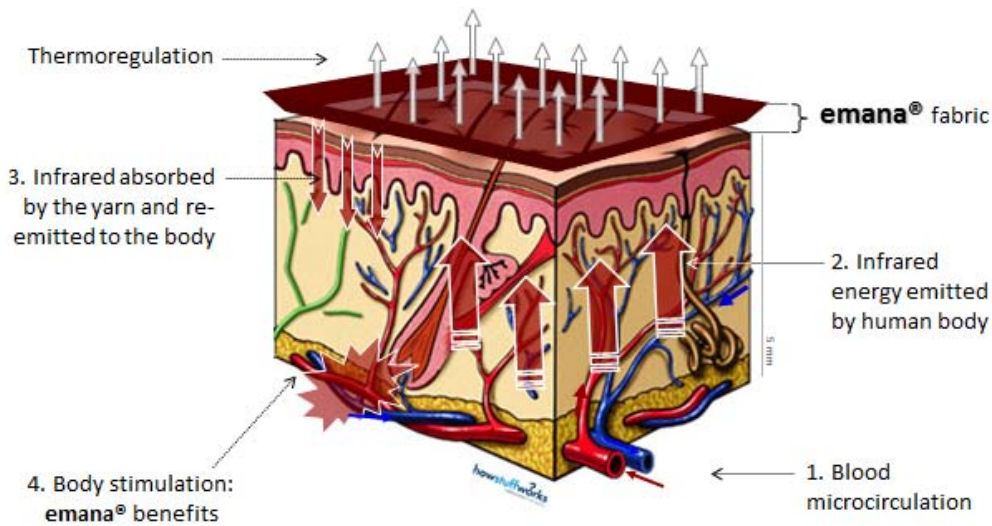


Figure 2: Human Skin in contact to emana[®] fabric.

CLINICAL STUDIES

General Objectives:

The main goal of the clinical studies was to analyze the benefits of emana® garments (when worn in contact to the skin), such as blood microcirculation improvement, cellulite appearance, skin elasticity, collagen synthesis increase.

General Experimental Conditions:

During the study period, the subjects were instructed not to use any products or procedures to treat their skin including cellulite treatments - Gynoid Lipodystrophy (*GL*).

Subjects were instructed to discontinue use of any cosmetics and aesthetical treatments in the test site (buttocks and thighs) 48 hours before the start of the study.

Subjects were instructed to stop wearing the leggings 24h before the return date scheduled, after wearing the leggings 6 hours a day for 30 and/or 60 days.

Protocol inclusion criteria included no current slimming diet.

BMI (body mass index - weight: height ratio) between 20 and 25 maintained.

1st Research Protocol – Evaluation of Blood Microcirculation Flow by Power Doppler Ultrasonography:

Objective:

This study appraised the effect on increasing of blood microcirculation, comparing one leg covered by emana® and other leg with PA std fabric, after wearing long panty for 30 and 60 days for 6h/d, through the ultrasound with Power Doppler method.

Subjects Profile:

- Sample = 2x15 paired
- Gender = female
- Age = 18 – 45 years

Textile Product: Long Panty

In figure 3, the model of the garment tested.

Long Panty confectioned in seamless, approximately 300 g/sq.m and 10% Spandex, and low level of compression: 3-4 mmHg.

T leg – Emana PA Microfiber Full Dull - and Y leg - PA Standard microfiber Full Dull (PA Std). Both microfibers with same dtex and dpf.



Figure 3: Long Panty Seamless

Results:

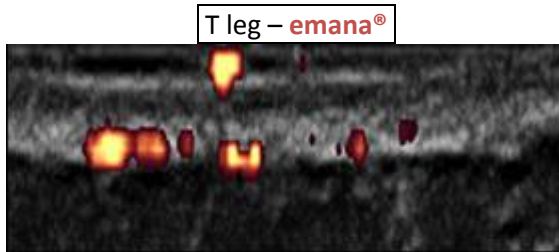


Figure 4: Initial condition - Day 0 – T leg - emana®

↓ After 60 days 6 h/d

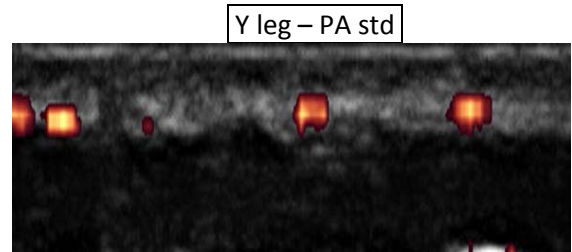
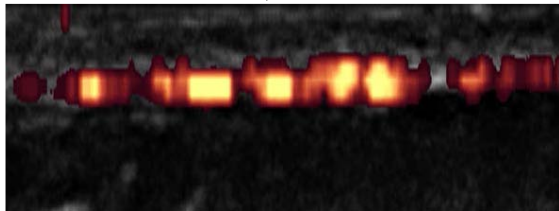


Figure 5: Initial condition - Day 0 – Y leg – PA std

↓ After 60 days 6 h/d

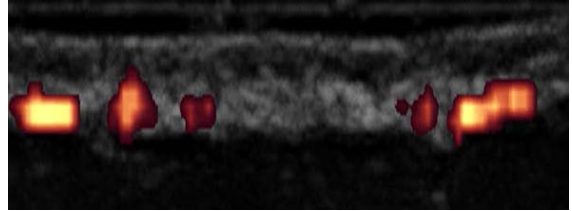
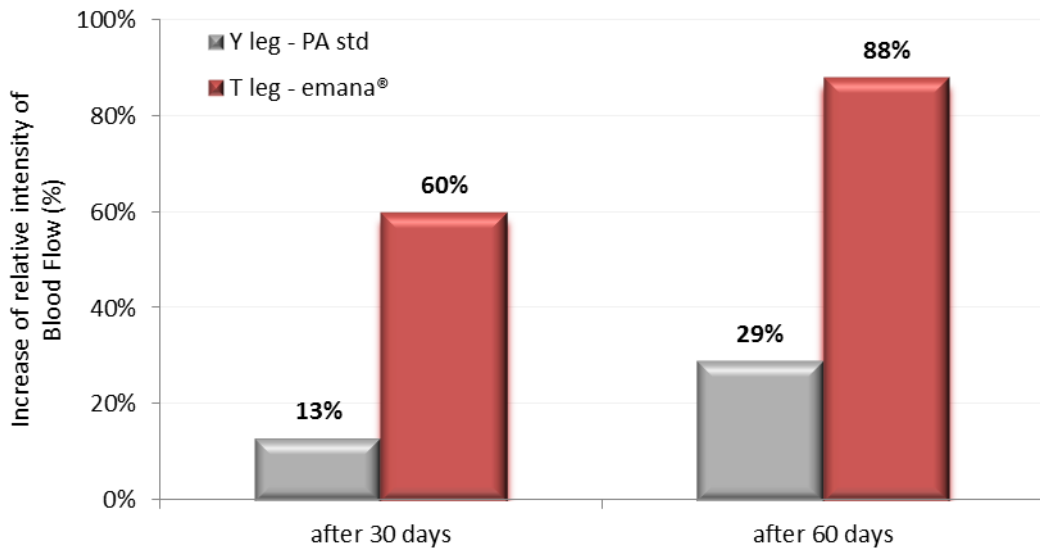


Figure 6: Effect observed by Power Doppler Ultrasonography of one subject, T leg - emana® and Y leg – PA Std, after 60 days 6h/d, as an example. The red-yellow color scale identifies the sites where there is Blood Flow. Yellow identifies the most intensive Blood Flow.

In the Figure 6 it is possible to observe a sample of the effect on one subject. The effect demonstrates by the higher intensity of the red-yellow colors, the higher Blood Microcirculation flow, after 60days 6h/d, on the leg with Emana fabric.



Graphic 1: Increase of relative intensity of Blood Flow.

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In the average, T legs - emana® shows:
 60% stronger blood microcirculation, after 30 days 6h/d and,
 88% stronger blood microcirculation, after 60 days 6h/d, both comparing to day 0.

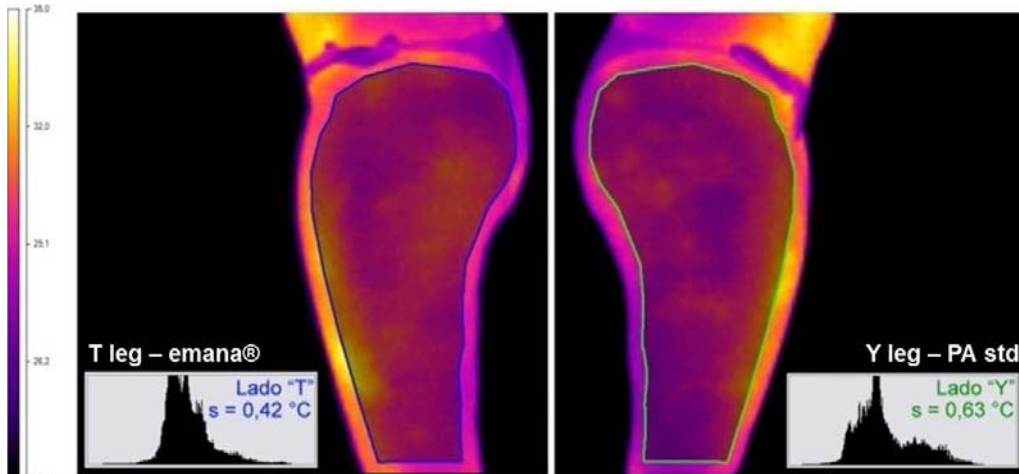


Figure 7: Thermography images of T leg – emana® and Y leg – PA std. Colors Scales inform the temperatures of the different zones, following the left side scale – from dark blue = around 23°C until light yellow = around 36°C.

Figure 7 shows the best temperature homogeneity in T leg - emana®, comparing to Y leg - PA Std, which demonstrates the stronger blood microcirculation flow in T leg - emana®.

According to the results of the sensory assessment of perceived efficacy showed that:
 73% of the subjects perceived blood microcirculation improved in the area covered by emana® fabric, in less than 1 month.

Conclusions of Blood Microcirculation Flow Analysis:

Emana leg showed a result 4.6 times better than PA Std Leg, after 30 days per 6 h/day and 3 times better, after 60 days per 6 h/day. This is statistically significant.

2nd Research Protocol - Evaluation of skin roughness by 3-D images:

Objective:

This study appraised the effect of cellulite appearance (Gynoid Lipodystrophy - GL), comparing one leg covered by emana® and other leg with PA std fabric, through of skin roughness evaluation method by image analysis.

Subjects Profile:

- Sample = 2x15 paired
- Gender = female
- Age = 18 – 45 years
- GL Grade = II and III

Textile Product: Long Panty

In figure 8, the model of the garment tested.

Long Panty confectioned in seamless, approximately 300 g/sq.m and 10% Spandex, and low level of compression: 3-4 mmHg.

T leg – Emana PA Microfiber Full Dull - and Y leg - PA Standard microfiber Full Dull (PA Std). Both microfibers with same dtex and dpf.



Figure 8: Long Panty Seamless

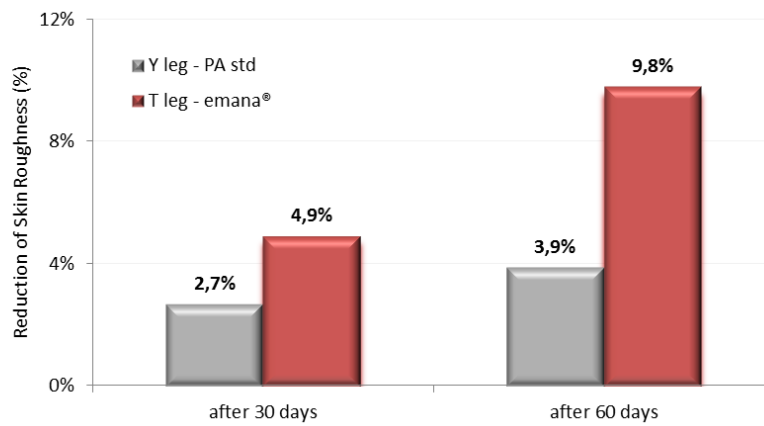
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Results:

In figure 9, It's possible to observe the exact location of the skin roughness surface measurement.



Figure 9: areas of the skin roughness surface measurement.



Graphic 2: Reduction of Skin roughness (%).

According to the results obtained in the study, the statistical assessment of the skin roughness data in the area of high back thighs showed that:

In average, T leg - emana® **reduced 9.8% relative skin roughness** after 60 days 6 h/d wearing the long panty leggings and **4.9%** after, 30 days per 6 h/d. This is statistically significant.

According to the results of the sensory assessment of perceived efficacy showed that:

73% of the subjects perceived reduction of cellulite appearance after 4 weeks in the area covered by emana® fabric.

Conclusions of Evaluation of skin roughness:

According to the results obtained from the statistical analysis, after 60 days 6 h/d of treatment, T leg – emana® delivered an effect of skin roughness reduction of **2.5 times better** than Y leg – PA std, which is statistically significant. After 30 days, there were no statistically significant differences between the results of fabrics T and Y.

3rd Research Protocol – Synthesis of Collagen in the skin by Fluorescence spectroscopy:

Objective:

Analyze of the stimulus to synthesis of collagen in the skin, comparing one leg covered by emana® and other leg with PA std fabric, by fluorescence spectroscopy method

Subjects Profile:

- Sample = 2x15 paired
- Gender = female
- Age = 20 – 45 years

Textile Product: Long Panty

In figure 10, the model of the garment tested.

Long Panty confectioned with single jersey, approximately 300 g/sq.m and 10% Spandex, and low level of compression: 3-4 mmHg.

T leg – Emana PA Microfiber Full Dull - and Y leg - PA Standard microfiber Full Dull (PA Std). Both microfibers with same dtex and dpf.



Figure 10: Long Panty – single jersey

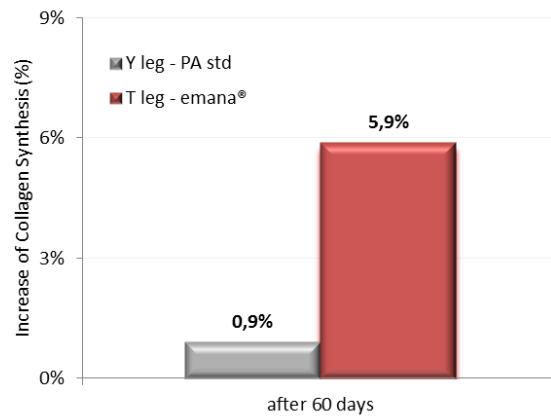
Results:

In figure 11, It's possible to observe the exact location of the collagen synthesis surface measurement.



Figure 11: areas of the collagen synthesis surface measurement.

According to the results of the comparative statistical analysis between fabrics T – emana[®] and Y – PA std, after 60 days 6 h/d of treatment, fabric T provided a percentage of skin collagen synthesis significantly higher than fabric Y: **+5%**.



Graphic 3: Increase of Collagen Synthesis (%).

According to the results of the sensory assessment of perceived efficacy showed that:

67% of the subjects perceived improvement of smoother skin, one of the skin collagen synthesis, in the area covered by emana[®] fabric, in less than 4 weeks.

Conclusions of Collagen Synthesis Analysis

The treatment for 60 days 6 h/d of fabric T – emana[®] improved the skin collagen synthesis approximately **6.5** times comparing to fabric Y – PA std.

4th Research Protocol – Skin Elasticity Evaluation by Cutometry :

Objective:

Through a Cutometry measurements which provides us a quantitative assessment of the biomechanical properties of the skin, the laboratory analyzed skin elasticity improvement, which can be translated to “younger skin”, comparing one leg treated with emana® and other leg, with PA std.

Subjects Profile:

- Sample = 2x15 paired
- Gender = female
- Age = 20 – 45 years

Textile Product: Long Panty

In figure 12, the model of the garment tested.

Long Panty confectioned with single jersey, approximately 300 g/sq.m and 10% Spandex, and low level of compression: 3-4 mmHg.

T leg – Emana PA Microfiber Full Dull - and Y leg - PA Standard microfiber Full Dull (PA Std). Both microfibers with same dtex and dpf.



Figure 12: Long Panty – single jersey

Results:

In figure 13, It's possible to observe the exact location of the skin elasticity measurement.

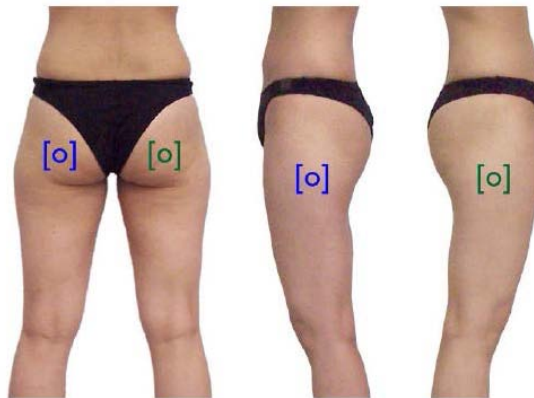
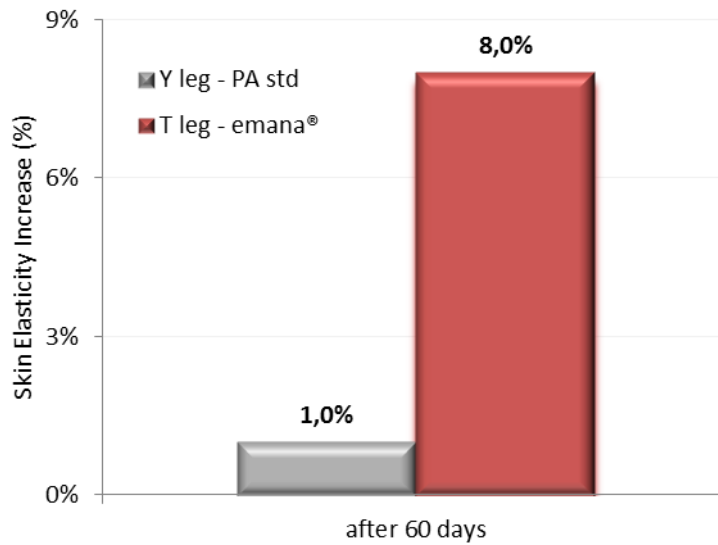


Figure 13: areas of the skin elasticity measurement.



Graphic 4: Skin Elasticity Increase (%).

The treatment for 60 days 6 h/d of fabric T – emana® increased skin elasticity 8%, while PA std fabric achieved an increase of 1%.

According to the results of the sensory assessment of perceived efficacy showed that:

67% of the subjects perceived improvement of smoother skin, one of higher skin elasticity, in the area covered by emana® fabric, in less than 4 weeks.

Conclusions of Skin Elasticity Analysis:

Emana technology presented a significant 8-fold superior efficacy compared to PA std.

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CONCLUSIONS of **emana**[®] Clinical tests

emana[®] main benefits :

- **Blood Microcirculation Flow Improved**
- **Better Cellulite – Orange Peel Appearance**
- **Increase of Skin Smoothness**
- **Higher Collagen Synthesis**
- **Nice touch and moisture management of Polyamide 6.6 microfiber Full Dull**
- **Good dyeability all colors, full white**
- **Claims by robust scientific studies**
- **Everlasting effect**

Not forgetting:

- Customer Certificated by SOLVAY in order to guarantee the claims to the final users
- **emana**[®] produced by SOLVAY, an innovative enterprise with more than 50 years on man-made fibers
- Worldwide published patents

Observations:

- ° The use of emana[®] is contraindicated in pregnant women as well as in areas where the skin is not intact, since
- ° SOLVAY has not made clinical studies whit the use of the product in these cases.
- ° emana[®] garments can be worn also during sleeping.
- ° emana[®] can be associate to body creams treatments.
- ° emana[®] garments don't heat, comparing to PA std microfibers garments.
- ° emana[®] yarns do not promote lose weight and/or measures.
- ° Please respect: Technical Standards for emana[®] Trademark License (Attachment no.1) to reach Emana Cosmetic benefits – Platform B1 and B2.

Attachment no.1: Technical Standards for emana® Trademark License



Technical Standards for Emana® Trademark License

Rhodia has established specific quality standards for Emana® Trademark License. The testing protocols cover: (a) fabric density and construction, (b) concentration of active minerals, (c) % of Emana® in direct contact with skin and (d) level of far infrared emission. The four existing platforms summarizes the certification category of each garment or fabric, depending on the expected benefits and result of the technical tests performed by Rhodia:

Emana® Platform B.1.

Claimed benefits: reduction of cellulite appearance or orange peel, improvement of skin smoothness, increase of skin firmness and elasticity, collagen synthesis and skin microcirculation enhanced and better skin thermoregulation.

End-use examples: shapewear, underwear, pantyhose, legging and other intimate apparels.

Minimum emana® density required: 110 g/m².

Minimum use time required: At least 30 consecutive days of usage during 6 hours per day.

Emana® Platform B.2.

Claimed benefits: Improvement on skin smoothness, firmness and elasticity, younger and silky skin, skin microcirculation enhanced and better skin thermoregulation.

End-use examples: top, bra, blouse, sleepwear, underwear and other intimate apparels.

Minimum emana® density required: 40 g/m² (for woven 80g/m²)

Minimum use time required: At least 60 consecutive days of usage during 6 hours per day.

Emana Platform P.1.

Claimed benefits: Performance Improvement, well-being, enhancement of skin microcirculation, biostimulation, better skin thermoregulation, less oxygen consumption, the higher strength reached with no additional muscle damage

End-use examples: tights, active tank, legging, panty

Minimum emana® density required: 200 g/m².

Minimum use time required: direct contact with the skin needed during exercise.

Emana Platform P.2.

Claimed benefits: Enhancement of skin microcirculation, biostimulation and better skin thermoregulation.

End-use examples: t-shirt, shorts, activewear, casualwear.

Minimum emana® density required: 40 g/m² (for woven 80g/m²)

Minimum use time required: direct contact with the skin needed during exercise.

This document is only a supporting technical guide. The use of the EMANA® trademark is only authorized after the articles are submitted to the Emana® Trademark License Agreement, do not hesitate to contact our Technical Assistance Team, they will be always available to provide additional clarification and adequate support to help you get the maximum profit of our products benefits.

The use of Emana® is contraindicated in pregnant women as well as in areas where the skin is not intact, since Rhodia has not made clinical studies whit the use of the product in these cases

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