

# SYN<sup>®</sup>-COLL

Boost and protect collagen to iron out the appearance of wrinkles

## CHARACTERISTICS

### Introduction

SYN<sup>®</sup>-COLL is an innovative wrinkle smoothing bioactive that comprises boosting of collagen production as well as providing collagen protection from degrading enzymes. Both activities work synergistically to achieve a maximal wrinkle smoothing effect.

This scientific breakthrough is based on DSM's many years of experience in synthesizing peptides. SYN<sup>®</sup>-COLL is a small tripeptide with a unique sequence to mimic the human body's own mechanism to produce collagen via TGF- $\beta$ .

SYN<sup>®</sup>-COLL also protects collagen from degradation. This safeguarding is achieved by inhibition of the expression of matrix metalloproteinases (MMP 1 and 3) and of pro-inflammatory cytokines. MMP 1 is one of the key enzymes in collagen degradation.

### Composition

INCI name	Content	CAS No.	EINECS/ELINCS
Palmitoyl Tripeptide-5	0.1-1%	623172-56-5	none
Glycerin	>50%	56-81-5	200-289-5
Aqua	25-50%	7732-18-5	231-791-2

### General Properties

- Appearance: clear to slightly opaque, colorless to yellowish, viscous liquid.

## FORMULATING

### Solubility

- Miscible with water (opalescent to turbid solution)
- Insoluble in lipophilic components

### Incorporation

- SYN<sup>®</sup>-COLL is provided as a glycerin-based aqueous solution. It is water-soluble and can be processed either cold or warm (up to 2 hours at 80°C). SYN<sup>®</sup>-COLL can be incorporated into the aqueous phase of a cosmetic formulation. The incorporation at the end of the production process at < 40°C is still recommended.

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## Incompatibilities

- Compatible with up to 50% ethanol
- In general SYN<sup>®</sup>-COLL shows a very good compatibility with all groups of raw materials like emulsifier systems, emollients and waxes, preservatives, hydrocolloids, sunscreens, detergents and other commonly used substances.
- Recommended pH of the final formulation: 3.0 - 7.0, it can be adjusted with commonly used neutralizing agents
- However, SYN<sup>®</sup>-COLL usually precipitates if diluted with excess of water. This precipitate does not have any influence on the activity of SYN<sup>®</sup>-COLL and disappears by adding an oil phase.
- Nevertheless the compatibility always depends on the complete final formulation. So the formulator has to monitor potential incompatibilities during the time of storage with each formulation.

VARIOUS
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## Storage

SYN<sup>®</sup>-COLL may be stored for at least 36 months from the date of manufacture in the unopened original container protected from light in a clean place and at a temperature between 2 and 8°C. The 'Best use before' date is printed on the label. Keep package tightly closed. Once opened, use contents quickly. In order to avoid secondary microbial contamination, following opening, containers should be handled with special care. For safety information please refer to the Safety Data Sheet (SDS).

## Use level

For skin care preparations a concentration of 1 - 3% SYN<sup>®</sup>-COLL is recommended.

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# Intensive Anti Wrinkle Treatment - In Vivo Study

With SYN<sup>®</sup>-COLL

This nourishing cream was formulated for the in vivo study of PENTAPHARM's anti aging active ingredient SYN<sup>®</sup>-COLL which stimulates the collagen synthesis via the activation of TGF-beta.

Phase	Ingredients	INCI Name	% w / w	Supplier
A	Water dem.	Aqua	ad 100	
	Glycerin 99.5%	Glycerin	5.00	100396
	SYN <sup>®</sup> -COLL	Palmitoyl Tripeptide-5 & Glycerin & Aqua	2.50	100288
B	Crodafos CES	Cetearyl Alcohol & Dicetyl Phosphate & Ceteth-10 Phosphate	5.00	100083
	Myritol 331	Cocoglycerides	6.00	100396
	Tegosoft TN	C12-15 Alkyl Benzoate	3.00	100415
	Tegosoft DC	Decyl Cocoate	3.00	100415
	Fitoderme	Squalane	2.00	
	Dow Corning 345 Fluid	Cyclopentasiloxane & Cyclohexasiloxane	3.00	100404
C	Sodium Hydroxide 10% sol.	Sodium Hydroxide	q.s.	
D	Euxyl K 300	Phenoxyethanol & Methylparaben & Propylparaben & Ethylparaben & Butylparaben & Isobutylparaben	0.80	100444
	Aristoflex AVC	Ammonium Acryloyldimethyltaurate & VP Copolymer	0.40	100394
E	Transcutol CG	Ethoxydiglycol	5.00	100414
F	Sodium Hydroxide 10% sol.	Sodium Hydroxide	q.s.	

100001/041

## Procedure

- 1 Heat phases A and B up to 75°C separately.
- 2 Add phase B to A while stirring then homogenize.
- 3 Adjust pH to 5.5-6.5 with C as necessary.
- 4 Cool down to approximately 65°C while stirring.
- 5 Add ingredients of phase D one after the other.
- 6 Homogenize until Aristoflex AVC is well dispersed then cool down further to 35°C while stirring.
- 7 Add phase E and keep on stirring for another 30 minutes.
- 8 If necessary correct the pH again with F to 5.5-6.5

## Supplier

100288 DSM Nutritional Products Ltd.	100083 Croda GmbH
100415 Evonik Goldschmidt GmbH	100394 Clariant GmbH
100396 Cognis Germany GmbH & Co. KG	100404 Dow Corning Corporation
100444 Schülke & Mayr GmbH	100414 Gattefossé AG

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# Anti Wrinkle Eye Contour Cream

With REGU<sup>®</sup>-AGE PF, SYN<sup>®</sup>-COLL and AMPHISOL<sup>®</sup> K

This concentrated cream replenishes and conditions the delicate skin around the eye area to help reduce wrinkles and fine lines whilst diminishing the appearance of dark circles and puffiness.

Phase	Ingredients	INCI Name	% w / w	Supplier
A	AMPHISOL <sup>®</sup> K	Potassium Cetyl Phosphate	1.00	100288
	Lanette 16	Cetyl Alcohol	3.00	100037
	Cutina CP	Cetyl Palmitate	1.50	100037
	Eutanol G	Octyldodecanol	3.00	100037
	Finsoln TN	C12-15 Alkyl Benzoate	2.50	100472
B	Pemulen TR-1	Acrylates/C10-30 Alkyl Acrylate Crosspolymer	0.10	100435
C	Glycerin, 99.5%	Glycerin	3.00	100037
	Water dem.	Aqua	ad 100	
D	REGU <sup>®</sup> -AGE PF	Hydrolyzed Rice Protein & Superoxide Dismutase & Glycine Soja (Soybean) Protein & Glycerin & Aqua & Phenoxyethanol & Sodium Benzoate & Potassium Sorbate & Sodium Dextran Sulfate	3.00	100288
	SYN <sup>®</sup> -COLL Preservative	Palmitoyl Tripeptide-5 & Glycerin & Aqua	1.00 q.s.	100288

100358/018

## Procedure

- 1 Heat part A to 75°C while stirring and add part B
- 2 Heat part C to 75°C and add to part A/B while stirring and homogenizing the emulsion.
- 3 Cool down the emulsion to 40°C and add part D.
- 4 Cool further under stirring to ambient temperature

## Technical Data

pH: 5.5-6.0 Viscosity(Brookfield RV4/10rpm): 17 140 cps

## Supplier

100288 DSM Nutritional Products  
100037 BASF  
100435 Lubrizol

100472 Innospec

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# Good Morning Cream

With PEPHA<sup>®</sup>-CTIVE and SYN<sup>®</sup>-COLL

This soft cream is formulated with PENTAPHARM's active PEPHA<sup>®</sup>-CTIVE which reloads the skin with new energy and with SYN<sup>®</sup>-COLL which stimulates the collagen synthesis

Phase	Ingredients	INCI Name	% w / w	Supplier
A	Olivem 1000	Ceteaqryl Olivat & Sorbitan Olivat	4.00	100537
	Merquat Plus 3330	Polyquaternium-39	2.00	100510
	Fitoderm	Squalane	5.00	100396
	Dow Corning 200 Fluid 350 cs	Dimethicone	0.50	100404
	Myritol 318	Caprylic/Capric Triglyceride	4.00	100396
	Lexfeel 7	Neopentyl Glycol Diheptanoate	3.00	100552
B	Preservative		q.s.	
	Glycerin 99.5%	Glycerin	4.50	100396
	Structure XL	Hydroxypropyl Starch Phosphate	0.90	100458
	Water demin.	Aqua	ad 100	
C	Spherica P-1500	Silica	1.00	100175
	PEPHA <sup>®</sup> -CTIVE	Algae Extract & Aqua & Phenoxyethanol & Potassium Sorbate & Sodium Benzoate	3.00	100288
	SYN <sup>®</sup> -COLL	Palmitoyl Tripeptide-5 & Glycerin & Aqua	2.00	100288
D	Citric Acid 25% solution	Citric Acid	q.s.	

100001/022

## Procedure

- 1 Heat phases A and B up to 75°C separately.
- 2 Add phase B to A while stirring then homogenize.
- 3 Cool down to approximately 45°C while stirring.
- 4 Add components of D one after the other while stirring then homogenize again.
- 5 While stirring cool down to room temperature.
- 4 Adjust pH to a value of approximately 5.0 by adding C.

## Technical Data

pH: 4.9      Viscosity(Brookfield RV4/10rpm): 15 900 cps

## Supplier

100288 DSM Nutritional Products Ltd.	100396 Cognis Deutschland GmbH & Co. KG
100510 Nalco Company	100537 B & T Company s.r.l.
100404 Dow Corning Corporation	100552 Inolex Chemical Company
100458 National Starch and Chemical	100175 Ikeda Corporation

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