

# SYN<sup>®</sup>-TACKS

## Boosting beauty through the dermal-epidermal junction

### CHARACTERISTICS

#### Introduction

Helping the skin to live in a healthy way is the major target of cosmetic research. However, traditional approaches to skin aging appear today to be incomplete without considering changes occurring at the dermal-epidermal junction (DEJ, *stratum basale*) and the evaluation of the changes of key proteins therein. The functionality of the DEJ that provides structural and functional integrity to the skin starts to change at around the age of 30. This process goes along, and is even accelerated by external influences such as UV light, with decreasing skin compactness, elasticity and a lack of skin firmness.

SYN<sup>®</sup>-TACKS, the combination of two peptides, offers for the first time the possibility to interact with the most relevant protein structures of the dermal-epidermal junction (DEJ): laminin V, collagen type IV, VII and XVII and integrin.

#### Composition

INCI name	Content	CAS No.	EINECS/ELINCS
Palmitoyl Dipeptide-5 Diaminobutyroyl Hydroxythreonine	0.1-1%	883558-32-5	None
Palmitoyl Dipeptide-5 Diaminohydroxybutyrate	0.1-1%	794590-34-4	None
Glycerin	>50%	56-81-5	200-289-5
Aqua	25-50%	7732-18-5	231-791-2

#### General Properties

- Appearance: slightly turbid to turbid, colorless to yellowish, viscous liquid with slightly viscous to gelatinized consistency

### FORMULATING

#### Solubility

- Soluble in water (opalescent solution)
- Insoluble in lipophilic components

#### Incorporation

- SYN<sup>®</sup>-TACKS 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>-TACKS 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>-TACKS 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 - 5.5, it can be adjusted with commonly used neutralizing agents.
- 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>-TACKS may be stored for at least 48 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% SYN<sup>®</sup>-TACKS is recommended.

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# Day Cream for In Vivo Study

With SYN®-TACKS

This soft cream was used for the in vivo study of PENTAPHARM's anti-aging ingredient SYN®-TACKS which improves the dermal epidermal junction (DEJ) functionality and therefore restructures the skin.

Phase	Ingredients	INCI Name	% w / w	Supplier
A	Water dem.	Aqua	ad 100	
	Glycerin 99.5%	Glycerin	1.20	100396
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	Sodiumhydroxide 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	SYN®-TACKS	Palmitoyl Dipeptide-5 Diaminobutyroyl Hydroxythreonine & Palmitoyl Dipeptide-5 Diaminohydroxybutyrate & Glycerin & Aqua	1.00	100288

100001/042

## 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 approximately 5.0 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 to approximately 5.0

## 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

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# Anti-Ageing Serum

With SYN<sup>®</sup>-AKE, SYN<sup>®</sup>-HYCAN, SYN<sup>®</sup>-TACKS and HYALURONIC ACID-BT

This light-feel and clear texture serum is designed for matured, damaged skin.

It regenerates the skin with multidimensional repairing activities.

HYALURONIC ACID-BT binds tremendous amounts of moisture to the skin.

All SYN<sup>®</sup>-Peptides act in deeper layers of the skin and have excellent anti-wrinkle properties.

Phase	Ingredients	INCI Name	% w / w	Supplier
A	WATER DEM.	AQUA	ad 100	
	Stabileze QM	PVM/MA DECADIENE CROSSPOLYMER	0.30	100184
	Glycerin 86.5%	GLYCERIN	4.00	
	HYALURONIC ACID-BT	SODIUM HYALURONATE	0.01	100288
	Preservative		q.s.	
B	Sodium Hydroxide 10% sol.	SODIUM HYDROXIDE, AQUA	0.40	
C	SYN <sup>®</sup> -AKE	GLYCERIN, AQUA, DIPEPTIDE DIAMINOBTYROYL BENZYLAMIDE DIACETATE	2.50	100288
	SYN <sup>®</sup> -HYCAN	GLYCERIN, AQUA, MAGNESIUM CHLORIDE, TETRADECYL AMINOBTYROYLVALYLAMINOBTYRIC	2.50	100288
	SYN <sup>®</sup> -TACKS	UREA TRIFLUOROACET GLYCERIN, AQUA, PALMITOYL DIPEPTIDE-5 DIAMINOBTYROYL HYDROXYTHREONINE, PALMITOYL DIPEPTIDE-5 DIAMINOHYDROXYBTYRATE	2.50	100288

SK-E-100310-4

## Procedure

- 1 Heat part A to 70°C while stirring.
- 2 Add part B while stirring.
- 3 Cool down the mixture to 35°C.
- 4 Add part C one after the other and cool down to room temperature while stirring.
- 5 Check pH value and correct it if necessary to a value of 5 - 5.5.

## Technical Data

pH: 5.14

Viscosity (Brookfield RV5/10 rpm): 29'520 cps

## Supplier

100288 DSM NUTRITIONAL PRODUCTS LTD

100184 ISP

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