

SOFTISAN[®] 649

A VEGAN ALTERNATIVE TO LANOLIN.



OLEOCHEMICALS

PERSONAL CARE

IOI Oleo GmbH

SOFTISAN® 649

A vegan alternative to lanolin

Since ages wool wax (lanolin) is used in personal care products. It is said to be absorbed by the skin, restoring its correct moisture balance and softness due to its high water binding capacity of approximately 200% of its own weight. However lanolin is an animal-derived product with a characteristic unpleasant smell and an intense color.

Discussions about potential allergic reactions, contaminations with pesticide residues and last but not least a constantly growing price lead to an increasing demand for a suitable replacement.

SOFTISAN® 649 (INCI: Bis-Diglyceryl Polyacyladipate-2) is a partial ester of diglycerin with medium chain fatty acids, isostearic acid, stearic acid, 12-hydroxystearic acid and adipic acid.



Color: SOFTISAN® 649 (left) vs. Lanolin (right)

Properties:

SOFTISAN® 649 has a consistency similar to that of natural lanolin. Its color is significantly lighter and the smell is almost neutral. It exhibits a comparable water binding capacity and has a drop melting range between 32°C and 37°C.

Application:

SOFTISAN® 649 is a versatile ingredient which can be used in a variety of personal care applications in form of O/W or W/O emulsions as well as water free formulations.

Characteristics	SOFTISAN® 649	Lanolin
Odor	Neutral faint	Characteristic, unpleasant
Appearance	Opaque pasty	Yellowish pasty
Water binding capacity	min. 200%	min. 200%
Drop point	32°C–37°C	38°C–44°C
Hazen color	200–300	> 500

SOFTISAN® 649 may improve many formulation concepts

Application	Benefits for the application	
Color Cosmetics	enhancing long lasting effects	prevents lips from drying
Sun Care	improves water resistancy	Viscosity and spreading control of the oil phase
Skin Care	high affinity to skin	film forming properties
Hair Care	gloss enhancing	conditioning
Baby Care	protects babies bottom from wetness	prevents from nappy rash

Lanolin vs SOFTISAN® 649

Sensorial Evaluation

Composition of cream A and cream B used in the sensorial test

Tradename	INCI	Cream A	Cream B
SOFTISAN® 649	Bis-Diglyceryl Polyacyladipate-2	–	3,0
Lanolin	Lanolin	3,0	–
IMWITOR®372 P	Glyceryl Stearate Citrate	2,5	2,5
IMWITOR®900 K	Glyceryl Stearate	2,5	2,5
MIGLYOL® Coco 810	Coco Caprylate/Caprata	4,0	4,0
WITARIX® MCT 60/40	Caprylic/Capric Triglyceride	2,0	2,0
MIGLYOL® 818	Caprylic/Capric/Linoleic Triglyceride	7,0	7,0
SOFTISAN® 378	Caprylic/Capric/Myristic/Stearic Triglyceride	3,0	3,0
Nafol 1618 HP	Cetearyl Alcohol	1,0	1,0
Glycerin 99,5	Glycerin	5,0	5,0
Aristoflex® AVC	Ammonium Acryloyldimethyltaurate/VP Copolymer	0,3	0,3
Phenonip	Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Propylparaben (and) Butylparaben (and) Isobutylparaben	0,7	0,7
Aqua dem.	Aqua	ad. 100,0	ad. 100,0
Tocopherol	Tocopherol	0,5	0,5
Fragrance	Parfum (EU) / Fragrance (US)	q.s.	q.s.
Sodium Hydroxide 10% in water	Sodium Hydroxide	q.s.	q.s.

A comparison of two blinded formulations was done with a trained test panel (n=12). The volunteers were asked to test a defined quantity of the two creams on their forearms. With a rating from 1 to 10 the volunteers compared different sensorial features of the two creams. The creams had identical composition with the exception of the main film forming agent (SOFTISAN® 649 in Cream B and Lanolin in Cream A), please see full composition on the opposite page.

Results of comparison of SOFTISAN® 649 (Cream B) with Lanolin (Cream A) in O/W Cream

The formulation with the non-animal derived Lanolin alternative SOFTISAN® 649 shows better acceptance for important sensorial characteristics. Most remarkable are the significant differences in spreadability and gloss of the cream. The tackiness of this type of rich cream is reduced, while the film forming effect is still rated as strong. The overall preference of the Cream B with SOFTISAN® 649 shows that this alternative ingredient is a very good alternative for Lanolin.

Sensory Profile SOFTISAN® 649 vs Lanolin



FORMULATIONS

Phase Change Emulsion No. 555

Phase	Tradename	INCI	Amount %
A	IMWITOR® 375	Glyceryl Citrate/Lactate/Oleate/Linoleate	3,0
A	IMWITOR® 600	Polyglyceryl-3 Polyricinoleate	1,0
A	MIGLYOL® 818	Caprylic/Capric/Linoleic Triglyceride	5,0
A	WITARIX®MCT 60/40	Caprylic/Capric Triglyceride	4,5
A	Cetearyl Alcohol	Cetearyl Alcohol	3,0
A	SOFTIGEN® 701	Glyceryl Ricinoleate	1,5
A	SOFTISAN® 649	Bis-Diglyceryl Polyacyladipate-2	2,0
A	SOFTISAN® 142	Hydrogenated Coco-Glycerides	3,0
A	Sunflower Oil	Helianthus Annuus Seed Oil	6,0
A	Cetiol® MM	Myristyl Myristate	1,0
A	Beeswax	Beeswax	0,5
B	Natrosol® Plus 330 CS	Cetyl Hydroxy Ethyl Cellulose	0,45
B	Glycerin 99,5	Glycerin	6,0
B	Phenonip® XB	Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Propylparaben (and) Butylparaben (and) Isobutylparaben	0,7
B	Aqua dem.	Aqua	ad. 100,0
C	Tocopherol	Tocopherol	0,5
C	Fragrance	Parfum (EU) /Fragrance (US)	q.s.
D	Sodium Hydroxide 10% in water	Sodium Hydroxide	q.s.

Preparation

1. Heat phase A and B separately to approx. 75–80 °C.
2. Add phase A to phase B with stirring.
3. Homogenise.
4. Cool phase A/B with gentle stirring to approx. 30 °C.
5. Add phase C to the emulsion
6. Adjust pH value with phase F to 6,0–6,5.

Supplier

IOI Oleo: IMWITOR®, MIGLYOL®, SOFTIGEN®, SOFTISAN®
BASF AG: Cetiol®
Ashland: Natrosol®
Clariant: Phenonip®

Shiny Lip Butter No. 676 with SOFTIGEN® PURA

Phase	Tradename	INCI	Amount %
A	SOFTIGEN® PURA	Olus Oil	50,9
A	MIGLYOL® Gel B	Caprylic/Capric Triglyceride (and) Stearalkonium	21,0
A	SOFTIGEN®Shea RSB 35	Butyrospermum Parkii Butter	4,0
A	IMWITOR® PG3 DIS	Polyglyceryl-3 Diisostearate	1,0
A	SOFTIGEN® Oil Argan organic	Argania Spinosa Kernel Oil	1,0
A	SOFTISAN® 649	Bis-Diglyceryl Polyacyladipate-2	15,0
A	Beeswax	Beeswax	3,0
A	Nafol® 22-98	Behenyl Alcohol	3,0
B	Panthenol	Panthenol	0,1
B	Tocopherol	Tocopherol	0,5
B	Aroma Concentrate Vanilla/Caramel	Aroma	0,5

Preparation

1. Melt phase A up to 80–85°C while stirring.
2. Homogenise.
3. Add the ingredients of phase B at 40°C and stir until homogeneous.
4. Pour into molds and put into the freezer for 30min.

Supplier

IOI Oleo: IMWITOR®, MIGLYOL®, SOFTIGEN®, SOFTISAN®
Sasol Geramy GmbH & Co. KG: NACOL®
Bell Flavors & Fragrances: Aroma Concentrate

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