

ANHYDROUS MOISTURISING GEL

SUGGESTED FORMULATION Ref. 998PBA

COMPOSITION:

MYRITOL 318 [1]	65,65 %
INCI: Caprylic/Capric Triglycerides	
JOJOBA OIL [2]	20,00 %
INCI: Buxus Chinensis	
ESTOL E04BW 3752 [3]	10,00 %
INCI: PEG-8 Beeswax	
PRISORINE IPIS 2021 [4]	2,50 %
INCI: Isopropyl Isostearate	
CHOLESTEROL NF [5]	1,00 %
INCI: Cholesterol	
LAURYDONE [6]	0,80 %
INCI: Lauryl PCA	
NIPASOL M [7]	0,05 %
INCI: Propylparaben	

SUPPLIERS

- [1] COGNIS
- [2] JAN DEKKER INTERNATIONAL
- [3] UNIQEMA
- [4] UNIQEMA
- [5] DISHMAN NETHERLANDS
- [6] SOLABIA
- [7] NIPA LABORATORIES

MANUFACTURING PROCEDURE

The ingredients are combined while heating and stirring gently. As soon as a clear liquid has been obtained heating is discontinued and the liquid is cooled with a cooling gradient of approximately 1°C/minute. At 43°C the liquid becomes turbid and the viscosity gradually increases. The turbidity is indicative for the formation of a liquid crystalline matrix (LCM). The presence of the LCM can easily be demonstrated with optical microscopy using a polarisation filter. Stirring is continued until the product has reached room temperature; this is essential. The gel is stirred for an additional hour to enable the gel to properly age. The viscosity markedly increases during cooling and the ageing process.

The viscosity can be adjusted by modifying the amount of PEG-8 Beeswax, with a minimum of 6%. Also the exchange of Caprylic/Capric Triglyceride for other vegetable oils such as Soybean Oil or Sunflower Oil will result in an increased viscosity. The gel is compatible with most commonly used lipids, Dimethicones and Cyclomethicones being an exception. The gel is compatible with Phenyltrimethicones.

ANHYDROUS MOISTURISING GEL 998PBA is not fragranced. A fragrance can be used, usually without any restrictions. As this gel is anhydrous, only minimal preservation is required.

TEWL MEASUREMENTS

Two formulations of ANHYDROUS MOISTURISING GEL were compared to demonstrate the reduced TEWL values induced by Cholesterol. The test formulations were composed as follows, after their INCI names:

	A	B
Caprylic/Capric Triglycerides	66,65	65,65
Buxus Chinensis	20,00	20,00
PEG-8 Beeswax	10,00	10,00
Isopropyl Isostearate	2,50	2,50
Cholesterol	-	1,00
Lauryl PCA	0,80	0,80
Propylparaben	0,05	0,05

A test panel was used composed of four individuals (female) with a Caucasian skin type. Average age: 34. The products were applied on the inside of the underarm and on the side of the neck covering an area of 10 cm².

Product A was applied on the left side and product B was applied on the right side. The TEWL values were measured during four hours with an interval of 1 hour.



Formulation A showed 11% reduction of the TEWL value on the underarm and 16% on the left side of the neck. Formulation B (containing Cholesterol) showed a 17% reduction of the TEWL value on the underarm and 23% on the left side of the neck. Standard deviation: 2%. As the data suggest the results are significant.

Lauryl PCA is considered as one of the most powerful moisturisers known. It is soluble in most lipids, including the sebum. Because of the solubility in the sebum Lauryl PCA is easily transported to the sub-cutaneous layers where it will hydrolyse and release PCA, the active moisturising substance.

The advantage of the inclusion of Lauryl PCA in a liquid crystalline structure is the induced controlled release. Further tuning of the release patterns can be realised by using Cholesterol. The results are in agreement with this statement.

DISHMAN NETHERLANDS's ANHYDROUS MOISTURISING GEL contains PEG-8 Beeswax. The major use of this product is as a gelling agent for the lipids. It also is a functional additive. Beeswax contains 10-15% polyesters based on long chain ω -Hydroxy Carboxylic Acids, inclusive of ω -Hydroxy Triacontanoic Acid. This is a principal constituent of the Ceramides that are present in the subcutaneous tissue. The gel is therefore expected to also contribute to long term maintenance of the moisture balance of the skin, particularly for the mature user. This effect cannot be achieved using regular yellow or white Beeswax.