



Natrulon® H-6 Humectant



INCI Name: Polyglycerin-6 (and) water

Description

Lonza, a worldwide leader in life sciences, introduces Natrulon® H-6, a new, naturally-derived multifunctional moisturizer/humectant which can be used to provide a wide range of benefits to personal care/ cosmetic formulations.

Produced by the condensation of vegetable derived glycerol Natrulon® H-6 is an aqueous solution of polyglycerols having an average molecular weight (Mw) equivalent to that of hexaglycerol i.e. approximately 462. This increased molecular weight, over that of the parent glycerol (Mw = 92) and the subsequent branching that results during the condensation process imparts a number of unique and highly beneficial properties to Natrulon® H-6, properties which translate into improvements in on- skin functionality and formulation aesthetics.

Features / Benefits

Feature	Benefit	What It Means for You
Vegetable Derived	BSE Free	Increased Customer Acceptance
Oligomeric	Slower Skin Penetration	Longer Residence Time Improved After Feel to Skin Conditioned Effect
Hygroscopic	Holds Moisture	Improved Skin Moisturization Improved Drying Time
Branched Structure	Rheology Modifier Improved Product "Cushion"	Increased Viscosification More Luxurious End Product
No Animal Testing	No Label Warnings	End-Product Labelling
GRAS Ingredients	Safety	Improved Customer Appeal

Formulation Effects of Natrulon® H-6 in a Typical Skin Care Emulsion*

Glycerol vs Natrulon® H-6 In-formulation and On-skin Effects at (pH 7.0)

	Cont.	4 % Glycerol	6 % Glycerol	8 % Glycerol	10 % Glycerol	4 % H-6	6 % H-6	8 % H-6	10 % H-6
Formulation Effects									
Viscosity	23,800	25,000	25,800	26,400	27,000	26,200	26,900	27,500	28,200
Cushion/Bulk	2.70	3.70	3.70	3.80	4.00	3.80	3.90	4.80	2.40
Over All Feel	2.60	3.80	3.80	3.90	4.10	3.90	3.90	4.80	2.40
On-skin Effects									
Drying Time	2.60	3.60	3.60	3.90	3.90	3.80	3.90	4.90	2.90
After Feel	2.80	3.80	3.85	3.90	4.0	3.60	3.80	4.90	2.50
Rich/Smooth	2.70	3.60	3.65	3.80	3.90	3.80	4.00	4.90	2.60
Skin Moisture	2.60	3.75	3.90	4.0	4.0	3.85	4.00	5.00	2.70
Over All Feel	2.70	3.70	3.90	4.0	4.20	3.70	3.80	4.50	2.70

The data above clearly shows the beneficial effects of Natrulon® H-6 in a typical skin cream emulsion. Not only does Natrulon® H-6 bring improvements in the formulation aesthetics i.e. in cushion, bulk and viscosity, but it also imparts significant improvements in on-skin properties such as after-feel, richness/smoothness, and moisturization.

Suggested Applications and Use Rates

- Water soluble, Natrulon® H-6 can be used in a diverse range of cosmetic applications and over a wide pH range.
- In skin creams and lotions, use levels of from 2–10 % are typical, with 8 % being the optimum for most formulations.
- In hair care applications, Natrulon® H-6 has been found to serve as a foam stabilizer at levels of approximately 2 %.

Safety and Toxicity Information

Natrulon® H-6 as an oligomer of glycerol is presumed to have a similar toxicity profile to that of its parent compound. No safety testing has been carried out on this material.

Formulation Compatibility

Natrulon® H-6 being highly water soluble, is readily incorporated into the water phase of creams and lotions and is fully compatible with most water soluble ingredients.

Stability

Natrulon® H-6 is stable at temperatures below 90°C for an extended time; however, if heated above 100 °C the material will begin to develop color, and to break down chemically. Natrulon® is stable over a wide pH range [3–9].

Typical Properties (as supplied)	
Appearance	Clear to Slightly Hazy, Yellow Liquid
Form	Liquid (Visc. 5000cps #4)
pH (10 % in Water)	3.5–6.0
Specific Gravity (25 °C)	1.22

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