



a Cargill company

PEG-Free Conditioner with Emulsun

Products Highlighted: *Emulsun®*, *Floramac® 10*, *Floralipids® Moringa Butter*, *Floramac Macadamia Oil Refined*, and *Floraesters K-100® Jojoba*



This moisturizing conditioner featuring Emulsun leaves hair looking and feeling healthy. Emulsun, a versatile naturally derived PEG-free emulsifier, allows for viscosity and product-feel customization in a variety of formulations. As part of a conditioner, Floraesters® K-100 Jojoba reduces comb force, reduces hair breakage, and enhances quaternium compound performance leading to better conditioned hair. Additionally, the use of Floramac 10 adds hair shine within this formulation. *

Phase	Trade/Common Name	INCI Name	Manufacturer	%wt/wt	
A.	Deionized Water	Water	-----	q.s.	
	Versene® Na2 Crystals Chelating Agent	Disodium EDTA	The Dow Chemical Co.	0.10	
	Natrosol® Plus 330 CS	Cetyl Hydroxyethylcellulose	Ashland	0.20	
B.	Floramac 10	Ethyl Macadamiate	Floratech	1.00	
	Floramac Macadamia Oil Refined	Macadamia Integrifolia Seed Oil	Floratech	1.00	
	Floralipids Moringa Butter	Moringa Oil / Hydrogenated Moringa Oil Esters	Floratech	1.00	
	Univul® MC80	Ethylhexyl Methoxycinnamate	BASF Corporation	1.00	
	Lanette® 16	Cetyl Alcohol	BASF Corporation	3.00	
	Emulsun	Hydrogenated Sunflower Seed Oil Polyglyceryl-3 Esters (and Hydrogenated Sunflower Seed Oil Glyceryl Esters (and) Cetearyl Alcohol (and) Sodium Stearoyl Lactylate	Floratech	3.00	
	Amphisol® K	Potassium Cetyl Phosphate	DSM Nutritional Products	0.15	
	Vitamin E Acetate	Tocopheryl Acetate	Essential Ingredients	0.50	
	C.	Zemea® Propanediol	Propanediol	DuPont Tate & Lyle BioProducts	1.00
		Floraesters K-100 Jojoba¹	Hydrolyzed Jojoba Esters (and) Jojoba Esters (and) Water (Aqua)	Floratech	1.00
Deionized Water		Water	-----	5.00	
D.	Preservative ²	-----	-----	q.s.	
	Citric Acid, USP (30% Solution)	Citric Acid (and) Water	Archer Daniels Midland Co.	q.s.	
E.	Deionized Water	Water	-----	5.00	
	Pyridoxine Hydrochloride	Pyridoxine Hydrochloride	DSM Nutritional Products	0.10	
	Microcare® Quat BHQ	Behentrimonium Chloride	Thor Specialties Ltd.	1.00	
F.	Microcare® Quat CTC 30	Centrimonium Chloride	Thor Specialties Ltd.	1.00	
	PEL-Sil® Q-80	Quaternium-80 (and) Propylene Glycol	Ele Corporation	1.00	
	Fragrance ³	-----	-----	q.s.	
Total				100.00	

Mixing Procedure

- Combine all ingredients of Phase A with moderate mixing and heat to 75-80°C.
- Combine all ingredients of Phase B in a separate vessel and heat to 75-80°C.
- Add Phase B to Phase A with rapid mixing at 75-80°C to create an emulsion.
- When the mixture becomes uniform, cool to 50-55°C.
- In a separate vessel, mix the Floraesters K-100 Jojoba with the Zemea Propanediol of Phase C at room temperature. Add the deionized water of Phase C and mix until uniform.
- Add Phase C to Phase AB with moderate mixing at 50-55°C.
- Add Phase D to Phase ABC, in the order listed, with moderate mixing at 45-50°C.
- In a separate vessel, mix the Microcare Quat BHQ with the deionized water of Phase E at 70-75°C. When it becomes uniform, cool to 45-50°C. Add the Pyridoxine Hydrochloride of Phase E to the mixture at 45-50°C.
- Add Phase E to Phase ABCD with moderate mixing at 45-50°C and mix until uniform.
- Add Phase F to Phase ABCDE at 45-50°C with moderate mixing. Stop mixing when the mixture becomes uniform.

¹ Floraesters K-100 Jojoba can also be directly added to and dispersed within the oil phase (Phase B).

² Preservative: Microcare® PHD [INCI: Phenoxyethanol (and) Decylene Glycol (and) Propylene Glycol] supplied by Thor Specialties Ltd.

³ Fragrance: Moon Sparkle S9-47008 [INCI: Fragrance] supplied by Premier Specialties, Inc.

Typical Properties: **pH: 4 - 5**
Viscosity: 179 - 458kcp

Note: The information herein is based on our research and the research of others and is believed to be accurate. No guarantee of accuracy is made and the products are provided without warranty, expressed or implied and upon condition that purchasers shall make their own tests to determine the suitability, stability or safety of such products for their particular purposes. Likewise, statements concerning the possible use of these products are not intended as recommendations to use these products in infringement of any patent or in the treatment, prevention, or cure of any medical condition. INCI/trade names must be verified with each manufacturer. (Cleared for Public Disclosure)