




# PEG-Free Conditioner with Emulsun

Products Highlighted: *Emulsun<sup>®</sup>, Floramac<sup>®</sup> 10, Floralipids<sup>®</sup> Moringa Butter, Floramac Macadamia Oil Refined, and Floraesters K-100<sup>®</sup> 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<sup>®</sup> 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 <sup>®</sup> Na2 Crystals	Disodium EDTA	The Dow Chemical Co.	0.10	
	Natrosol <sup>®</sup> Plus 330 CS	Cetyl Hydroxyethylcellulose	Ashland, Inc.	0.20	
B.	<b>Floramac 10</b>	<b>Ethyl Macadamiate</b>	<b>Floratech</b>	<b>1.00</b>	
	<b>Floramac Macadamia Oil Refined</b>	<b>Macadamia Integrifolia Seed Oil</b>	<b>Floratech</b>	<b>1.00</b>	
	<b>Floralipids Moringa Butter</b>	<b>Moringa Oil / Hydrogenated Moringa Oil Esters</b>	<b>Floratech</b>	<b>1.00</b>	
	Univul <sup>®</sup> MC80	Ethylhexyl Methoxycinnamate	BASF Corporation	1.00	
	Lanette <sup>®</sup> 16	Cetyl Alcohol	BASF Corporation	3.00	
	<b>Emulsun</b>	<b>Hydrogenated Sunflower Seed Oil Polyglyceryl-3 Esters (and) Hydrogenated Sunflower Seed Oil Glyceryl Esters (and) Cetearyl Alcohol (and) Sodium Stearoyl Lactylate</b>	<b>Floratech</b>	<b>3.00</b>	
	Amphisol <sup>®</sup> K	Potassium Cetyl Phosphate	DSM Nutritional Products	0.15	
	Vitamin E Acetate	Tocopheryl Acetate	Essential Ingredients	0.50	
	C.	Zemea <sup>®</sup> Propanediol	Propanediol	DuPont Tate & Lyle BioProducts	1.00
		<b>Floraesters K-100 Jojoba</b>	<b>Hydrolyzed Jojoba Esters (and) Jojoba Esters (and) Water (Aqua)</b>	<b>Floratech</b>	<b>1.00</b>
D.	Deionized Water	Water	-----	5.00	
	Preservative <sup>1</sup> Citric Acid, USP (30% Solution)	Citric Acid (and) Water	Archer Daniels Midland Co.	q.s. q.s.	
E.	Deionized Water	Water	-----	5.00	
	Pyridoxine Hydrochloride	Pyridoxine Hydrochloride	DSM Nutritional Products	0.10	
	Microcare <sup>®</sup> Quat BHQ	Behentrimonium Chloride	Thor Specialties Ltd.	1.00	
F.	Microcare <sup>®</sup> Quat CTC 30	Centrimonium Chloride	Thor Specialties Ltd.	1.00	
	PEL-Sil Q-80	Quaternium-80 (and) Propylene Glycol	Ele Corporation	1.00	
	Fragrance <sup>2</sup>	-----	-----	q.s.	
<b>Total</b>				<b>100.00</b>	

## Mixing Procedure

- Combine all ingredients of Phase A with moderate mixing and begin heating to 75-80°C.
- Combine all ingredients of Phase B in a separate vessel and begin heating 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, begin cooling 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 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 water of Phase E at 70-75°C. When it becomes uniform, begin cooling 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.

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

<sup>1</sup> Preservative: Microcare<sup>®</sup> PHD [INCI: Phenoxyethanol (and) Decylene Glycol (and) Propylene Glycol] supplied by Thor Specialties Ltd.

<sup>2</sup> Fragrance: Moon Sparkle S9-47008 supplied by Premier Specialties, Inc

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 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)