

## Antiaging skin care formulation with Eastman GEM™ retinyl sunflowerate

Part	INCI name	Wt%	Trade name	Manufacturer	Function
A	Water	60.9	—	—	—
	Cetearyl alcohol (and sodium cetearyl sulfate)	6.0	Kolliphor® CS A	BASF	Emulsifier
	Propanediol	10.0	Zemea®	DuPont Tate & Lyle	Solvent
	Betaine	1.0	GENENCARE® OSMS BA	DuPont	Humectant
B	Ethylhexyl palmitate	20.0	2-Ethylhexyl palmitate	—	Emollient
	Retinyl sunflowerseedate	0.1	Eastman GEM retinyl sunflowerate	Eastman	Active
C	Acacia senegal gum	1.0	KerrPoly GA	Kerry	Polymer
D	Caprylhydroxamic acid (and caprylyl glycol (and) glycerin	1.0	Spectrastat™	Inolex	Preservative

### Procedure

1. Heat and mix part A until uniform and fully melted/dispersed.
2. Remove heat, and propeller stir at medium speed.
3. Add part B with medium stirring when part A reaches 45°C or below.
4. Add part C with propeller stirring.
5. Add part D with propeller stirring.

*Continued >>>*

## Formulation notes

Solubility models of different formulation ingredients and skin models predict that efficacy of retinyl sunflowerate can be maximized using either 2-ethylhexyl palmitate or triheptanoin as an emollient in formulation. Both emollients are predicted to have the proper balance of solvency and molar volume to help retinyl sunflowerate achieve optimal bioavailability. The use of a liquid crystal emulsifier can further enhance the stability and aesthetics of your formulation containing retinyl sunflowerate.



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