



# Zemea™\* the Natural Choice... Purity and Renewable Performance

**Zemea™**  
renewably sourced™ propanediol

## Sulfate-Free Shampoo Formulation

PHASE	INGREDIENT	Wt, %
A	Water	33.82
A	Disodium EDTA	0.05
A	Sodium C14-16 Olefin Sulfonate	45.00
A	PEG-120 Methyl Glucose Dioleate	1.50
A	<b>Zemea™ Propanediol</b>	<b>4.75</b>
B	Cocamide MEA	3.00
B	Cocamidopropyl Betaine	10.00
C	Preservative	0.06
C	Glycol Distearate	1.50
D	Citric Acid (20%)	0.32

## Procedure

- Combine Phase A and slowly mix at 75° C.
- Slowly add Phase B.
- Mix at 75° C until uniform.
- Cool to 25° C.
- Add Phase C and continue mixing.
- Adjust pH to 6.0-6.5 with phase D.



## Benefits of Zemea™ Propanediol in Sulfate-Free Shampoo Formulation

- Less reduction in viscosity
- High stability
- Good foam height and drainage

## For additional information or samples, please contact:

DuPont Tate & Lyle Bio Products Customer Service

In the US, Canada, or Mexico: 1-866-404-7933

Other Countries: ++001-217-421-3443

On the web: [www.duponttateandlyle.com](http://www.duponttateandlyle.com)



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