

# long-lasting styling and thermal protection with Natrosol™ 250 HHR Hydroxyethylcellulose and Styleze™ W polymer

formula #: 12464-83

material #: 860227

ingredients (trade name   INCI name)		%w/w	supplier
<b>phase a</b>			
Deionized Water	Aqua (water)	79.4400	Local
Glycerin	Glycerin	1.0000	Local
Butylene Glycol	Butylene Glycol	3.0000	Local
Natrosol™ 250 HHR PC HEC	Hydroxyethylcellulose	0.2500	Ashland
<b>phase b</b>			
Emulsynt™ 1055 ester	Polyglyceryl-4 Oleate (and) PEG-8 Propylene Glycol Cocoate	0.4000	Ashland
Jeesorb S-20NF	Polysorbate 60	0.6000	Jeen International
Ceraphyl™ SLK ester	Isodecyl Neopentanoate	0.6000	Ashland
Ceraphyl™ 847 ester	Octyldodecyl Stearoyl Stearate	1.0000	Ashland
<b>phase c</b>			
PVP K-30 powder	PVP	1.0000	Ashland
Styleze™ W-17 polymer	Polyquaternium-55	5.8800	Ashland
Conditioneze™-37 PC (E) cationic solution	Polyquaternium-37 (and) Propylene Glycol Dicaprylate/Dicaprate (and) PPG-1 Trideceth-6	1.5000	Ashland
<b>phase d</b>			
Jeesilc CPS-312	Cyclopentasiloxane	1.5000	Jeen International
Jeesilc 110	Dimethicone	0.5000	Jeen International
Escalol™ 557 UV filter	Ethylhexyl Methoxycinnamate (Octinoxate)	0.2500	Ashland
Optiphen™ preservative	Phenoxyethanol (and) Caprylyl Glycol	1.5000	Ashland
D&C Violet No. 2 (0.01% in Shin Etsu KF-995)	Violet 2 (CI 60725) (and) Cyclopentasiloxane	1.5000	Local
<b>phase e</b>			
Sodium Hydroxide (10% aqueous solution)	Sodium Hydroxide	0.0800	Local
<b>total</b>		<b>100.00</b>	

## procedure

1. Add water, glycerin and butylene glycol to main vessel and begin propeller agitation.
2. Disperse Natrosol™ 250 HHR Hydroxyethylcellulose into phase a and heat to 75-80C.
3. Mix for about 45 minutes or until solution is smooth and clear.
4. Heat phase b ingredients to 75-80C and add to phase a with good mixing. Mix for 15 minutes.
5. Begin to cool batch down to RT.
6. Add PVP K-30, Conditioneze 37E-PC, and Styleze™ W-17 polymer one by one and mix until uniform. Ensure a smooth homogenous mixture is obtained after each addition.
7. Premix phase d ingredients and add to batch with good mixing. Mix until uniform.
8. Adjust pH to ~5.5 with 10% sodium hydroxide as needed.
9. q.s. batch to 100% to replace water lost.

## typical properties

description: Smooth violet cream

pH: 5.0-6.0

viscosity: 8,000-15,000 cP (brookfield RVT Spindle T-B, 10 rpm, 1min @ 25C, helipath)

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stability/challenge information: This formula passed standard stability protocol and micro challenge testing. The preservative system, however, has not been optimized to its lowest effective level.

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