

Anti-Dandruff Shampoo

SH-0006

	INCI Name, Trade Name	Weight %	Function
A.	1. Deionized Water	39.35	Diluent
	2. Acrylates Copolymer (30%), Carbopol®* Aqua SF-1 Polymer	5.00	Rheology Modifier
	3. Sodium Lauryl Sulfate (29%), Sulfochem™* SLS-WA Surfactant	16.00	Surfactant
	4. Sodium Laureth Sulfate (2 mole, 26%), Sulfochem™* ES2-TK Surfactant	16.00	Surfactant
	5. Sodium Hydroxide (18%)	0.50**	Neutralizer
B.	6. Deionized Water	10.00	Diluent
	7. Polyquaternium-10, <i>Ucare® Polymer JR-400</i>	0.25	Conditioner
	8. DMDM Hydantoin, <i>Glydant®</i>	0.30	Preservative
C.	9. Sodium Hydroxide (18%)	0.40**	Neutralizer
	10. Cocamidopropyl Betaine (35%), Chembetaine™* C Surfactant	4.00	Surfactant
	11. Citric Acid (50%)	0.70***	Acidifier
	12. Zinc Pyrithione (48%), <i>Zinc Omadine FPS</i>	2.50	Anti-Dandruff Agent
	13. Dimethiconol (and) TEA-Dodecylbenzenesulfonate, <i>Dow Corning® 1784 Emulsion</i>	3.00	Conditioner
	14. FD&C Blue No. 1 (0.1%)	1.00	Dye
	15. Fragrance, <i>Lavender-Mint, #6550083</i>	0.50	Fragrance
	16. Sodium Chloride	0.50****	Thickener

** q.s. to pH 6.5

*** q.s. to pH 5.5

**** q.s. to 3,500 mPa·s

Procedure:

1. Combine PART A: Add Carbopol®* Aqua SF-1 Polymer to deionized water. Add Sulfochem™* SLS-WA Surfactant and Sulfochem™* ES2-TK Surfactant with gentle mixing to minimize air entrapment.
2. Neutralize to pH 6.5 with sodium hydroxide.
3. Pre-combine PART B ingredients and heat slightly to 45°C to allow the polyquaternium-10 to thoroughly dissolve. Add PART B to PART A with gentle mixing.
4. Check pH and adjust to pH 6.5 with sodium hydroxide if necessary.
5. Add the cocamidopropylbetaine to the batch. Adjust pH with citric acid to 5.5.
6. Mix Zinc Omadine FPS and filter through cheesecloth before adding to batch.
7. Add remaining ingredients to the batch in order.
8. Adjust viscosity with sodium chloride to 3,500 mPa·s, if necessary.

Product Properties:

Appearance Blue, opaque, viscous liquid
pH 5.4 – 5.7

Viscosity (mPa·s)¹ 3,000 – 5,000

Yield Value (dyn/cm²) 140 – 200

Stability: Passed 3 months @ 45°C, 5 cycles freeze/thaw

Carbopol®* Aqua SF-1

Polymer Actives (%) 1.5

Surfactant Actives (%) 10.2

¹ Brookfield RVT @ 20 rpm, #4 spindle, measured after 24 hours

Supplier References:

Noveon, Inc. (2, 3, 4, 10)

Dow / Amerchol (7)

Lonza (8)

Arch Chemical (12)

Dow Corning (13)

Quantum Colours (14)

Bell Flavor & Fragrance (15)

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