



Cola[®] Quat HRC

CTFA/INCI: Bishydroxyethyl Dihydroxypropyl Stearammonium Chloride
Clearances: TSCA, DSL, ENCS, AICS, EINECS

DESCRIPTION

Cola[®] Quat HRC is a quaternary designed to give exceptional performance in hair and skin products. **Cola[®] Quat HRC** has been found through extensive testing, to be an excellent hair rinse conditioner. It is a superior product when compared to other quaternaries such as Quaternium 16, stearyl dimethyl benzyl ammonium chloride, and polymers based on PVP and cellulose.

In addition, combinations of **Cola[®] Quat HRC** and the polymeric quaternaries have been found to be an excellent low cost conditioner for hair rinses and shampoos. **Cola[®] Quat HRC** is compatible with all commonly used rinse and shampoo ingredients and exhibits a no build-up characteristic. Its cationic antistatic and high foaming properties suggest its use in fine laundering and softening products as well as for personal care preparations.

TYPICAL PROPERTIES

Appearance	Slightly hazy liquid
Color (GVCS 1933)	3
Ionic Nature	Cationic
pH (10% solution)	5.5
NaCl	5.0%
Moisture (K.F.)	58.6%
Packaging	450 lb. net liquid (55 gallons)

PERSONAL CARE APPLICATIONS

HAIR RINSE

Cola[®] Quat HRC is recommended in hair rinses at 2.0% to 7.0% levels on an “as is” basis to eliminate tangling during wet combing. The hair is left soft and manageable with significant reduction in flyaway. It also improves body and gloss. The softening effect is also apparent on the skin.

The following results of a rinse test on hair swatches demonstrate the excellent conditioning properties of **Cola[®] Quat HRC**.

Hair Rinse Comb-Out Test Results

Each product was applied as a 2% active rinse (pH adjusted to 4) to damp hair swatches, agitated one minute and rinsed under running tap water for 0.5 minutes.

<u>Product</u>	<u>Time in Seconds for Wet-Combout</u>
Cola [®] Quat HRC	8
Quaternium 16	25
Stearalkonium Chloride	40
Quaternium 23	11
Quaternium 19	35
Control – Water only	43

The following clear and opaque hair rinse starting formulations containing 2.0% active Cola[®]Quat HRC have been found to be stable in accelerated stability testing:

<u>Hair Rinse Formulations</u>		
	<u>% by Wt.</u>	
	<u>Clear</u>	<u>Opaque</u>
I. Water	92.1	70.1
*Natrosol 250 HHR	1.0	1.0
Preservative	0.2	0.2
Cola [®] Quat HRC	6.7	6.7
II. Water	---	20.0
**Opacifier E295	---	2.0
	100.0	100.0
Approximate pH as is	4.4	4.4
Approximate viscosity	3000 cp.	3000 cp.

Procedure: Disperse the hydroxyethyl cellulose in the water with agitation. When dissolved, add remaining ingredients. For the opaque lotion, it will be necessary to reserve a portion of the water for diluting the opacifier before adding to the rinse.

* Hercules, Inc.

** Morton Chemical Company

Cola[®]Quat HRC is compatible with Polymers JR and LR and provides additional conditioning properties to hair setting rinses based on these polymers.

SHAMPOOS

Cola[®]Quat HRC's good foaming characteristics, combined with its cationic substantivity suggest its use as a shampoo conditioner. When incorporated in both amphoteric shampoos and in formulations containing anionic ingredients, Cola[®]Quat HRC produces wet-combability matching that of conditioning shampoos currently in the marketplace. It also serves as a viscosity builder. The following amphoteric conditioner shampoo and anionic/nonionic shampoo formulas demonstrate the exceptional versatility of Cola[®]Quat HRC. Both formulas have been found to be stable after accelerated stability testing.

<u>Amphoteric Conditioner Shampoo</u>		
<u>Compound</u>	<u>% by Wt</u>	<u>% Active</u>
Water	46.7	---
Preservative	0.2	---
Cola [®] Teric COAB	25.0	7.5
Cola [®] Teric ISM	21.4	7.5

Cola[®]Quat HRC

6.7
100.0

2.0
17.0

Procedure: Add ingredients in order listed, blending thoroughly after each addition. Warming is not necessary but will speed solution of Cola[®]Teric ISM. Add fragrance and color. Adjust pH to level desired with phosphoric acid.

At pH 5.8 Approximate viscosity 1200 cp.
At pH 4.8 Approximate viscosity 2000 cp.
At pH 4.0 Approximate viscosity 2500 cp.

Anionic/Nonionic Shampoo

Cola[®]Quat HRC is compatible with lauryl sulfates and imparts conditioning effects.

<u>Compound</u>	<u>% by Wt.</u>	<u>% Active</u>
Water	45.7	---
Preservative	0.2	---
Ammonium Lauryl Sulfate	45.8	12.8
Cola [®] Mid AL	4.0	4.0
Cola [®] Quat HRC	<u>4.3</u>	<u>1.3</u>
	100.0	18.1

Procedure: Add ingredients in order listed while stirring gently. No heat is necessary. When blended, add fragrance and color. Adjust pH to level desired.

At pH 6.3 Approximate viscosity 2700 cp.
At pH 4.5 Approximate viscosity 4500 cp.

SKIN CARE PRODUCTS:

Cola[®]Quat HRC's cationic skin softening effect should aid in imparting additional cosmetic appeal to facial and body cleansers, moisturizing creams and lotions and other personal care products. The following formulation demonstrates the use of Cola[®]Quat HRC in an emollient O/W cream based on refined coconut oil. Used as an overnight cream, it spreads readily, relieving dryness and chapping and leaving skin soft and smooth. Accelerated aging test at high and low temperatures show good stability.

COLAMID SA Cream

	<u>Compound</u>	<u>% by Wt.</u>
Part I	Water	66.8
	Cola [®] Quat HRC	3.0
	Methyl Paraben	0.1
Part II	Refined Coconut Oil	20.0
	Cola [®] Mid SA	10.0
	Butyl Paraben	<u>0.1</u>
		100.0

pH 10% as is 5.5 to 6.0 – Bright white non-flowable cream.

Procedure: Heat Part II until Cola[®]Mid SA melts (85°C). Heat Part I and add to Part II with agitation. Add perfume, color and pack while hot.

PHYSIOLOGICAL DATA

Skin Irritation: **Cola[®] Quat HRC** is a moderate skin irritant when tested as a 3% active aqueous solution.

Eye Irritation: Draize eye tests at 3% active rated it as non-irritating.

Oral Toxicity: Feeding studies at 10% active resulted in an LD50 of greater than 5g/kg.

It exhibits bactericidal properties against gram negative organisms such as pseudomonas aeruginosa when tested at 5% aqueous dilution by weight.

LAST UPDATED 07/14/2007

WARRANTY

Colonial Chemical guarantees that its products meet published specifications. No other warranties or guarantees are expressed or implied because the use of this material is beyond the control of Colonial Chemical.

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