

# **Color Retention Technology™**

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**Grant Industries, Inc.**

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# Trade Name: CRT-W

**INCI:** Water (and) Isododecane (and) Isobutylmethacrylate/  
Bis-Hydroxypropyl Dimethicone Acrylate Copolymer (and)  
Stearyl Alcohol (and) Cetareth-20

## Benefits

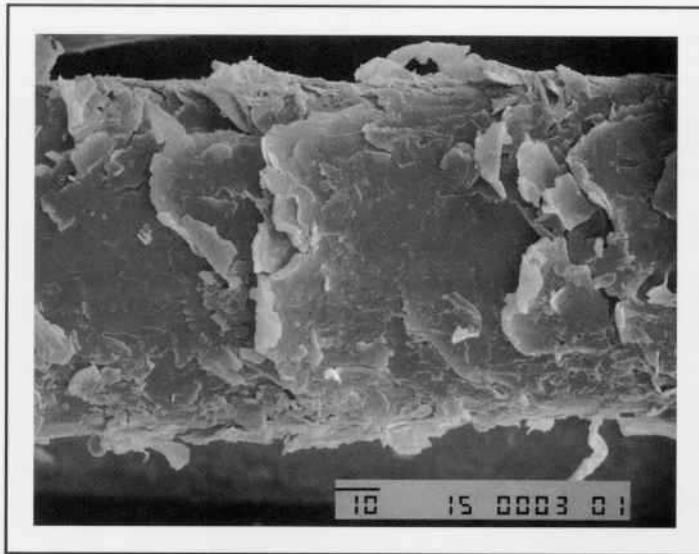
- Non-quat film former
- No heavy build up
- Hair color protectant
- Flyaway/frizz control
- Shine improvement
- Silicone benefit without reduction of foam and/or lather

## Applications

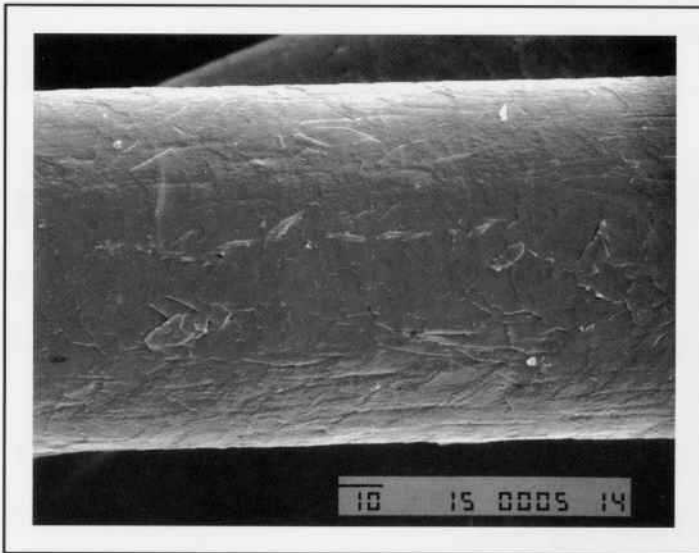
- Color Protection wet line shampoo and/or conditioner
- Frizz Control pump spray
- Temporary hair color
- Hair Dye additive
- SPF hair and scalp protection formulas

# CRT-W Function - SEM Observation

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*Shampooed without CRT-W*



*Shampooed with 5% CRT-W*

- Superior non-quat silicone film former locks color dye on hair shaft cuticles without leaving heavy build up.
- Dyes remain in hair longer with protective water-resistant silicone polymer treatment.

# Color Fade Results

## EXAMPLE



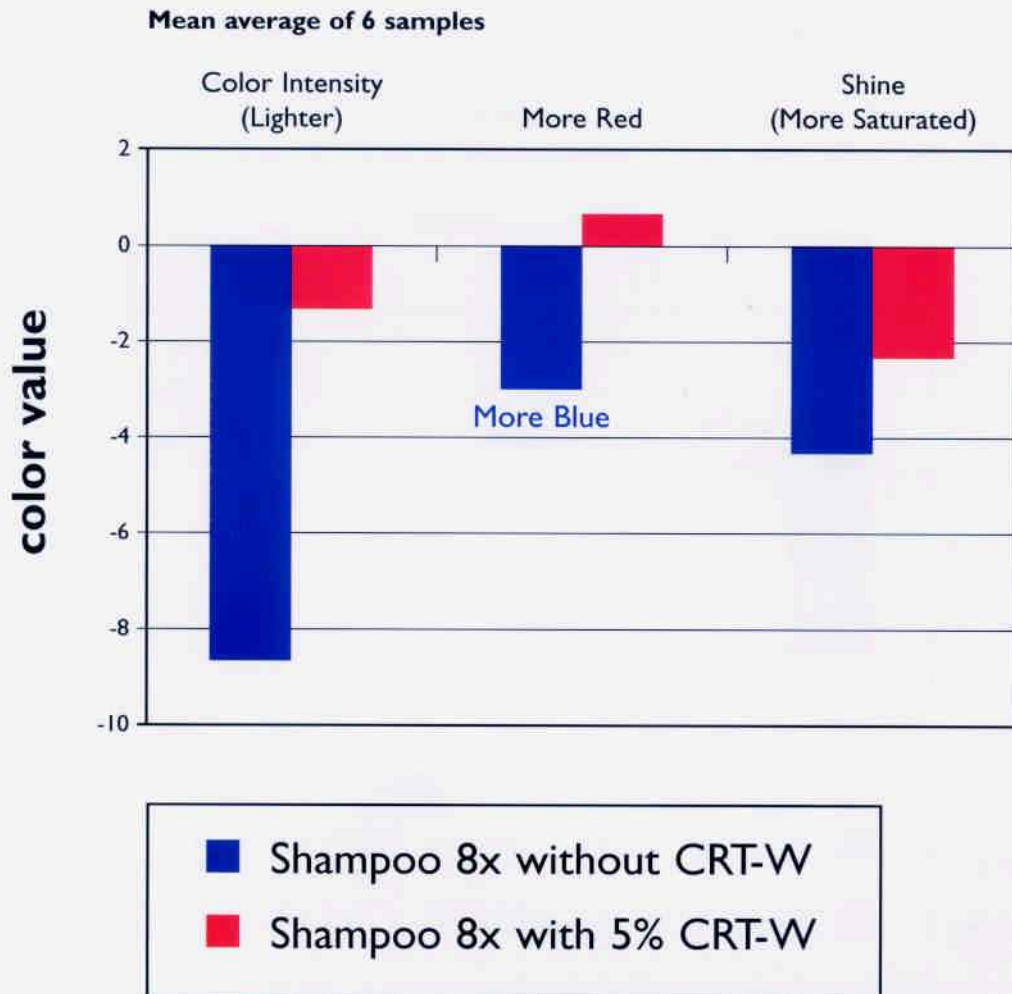
## Color Fade Measurements

Instrument: Spectra Flash 600 (data color spectrophotometer)

“Control” used to blank color-meter

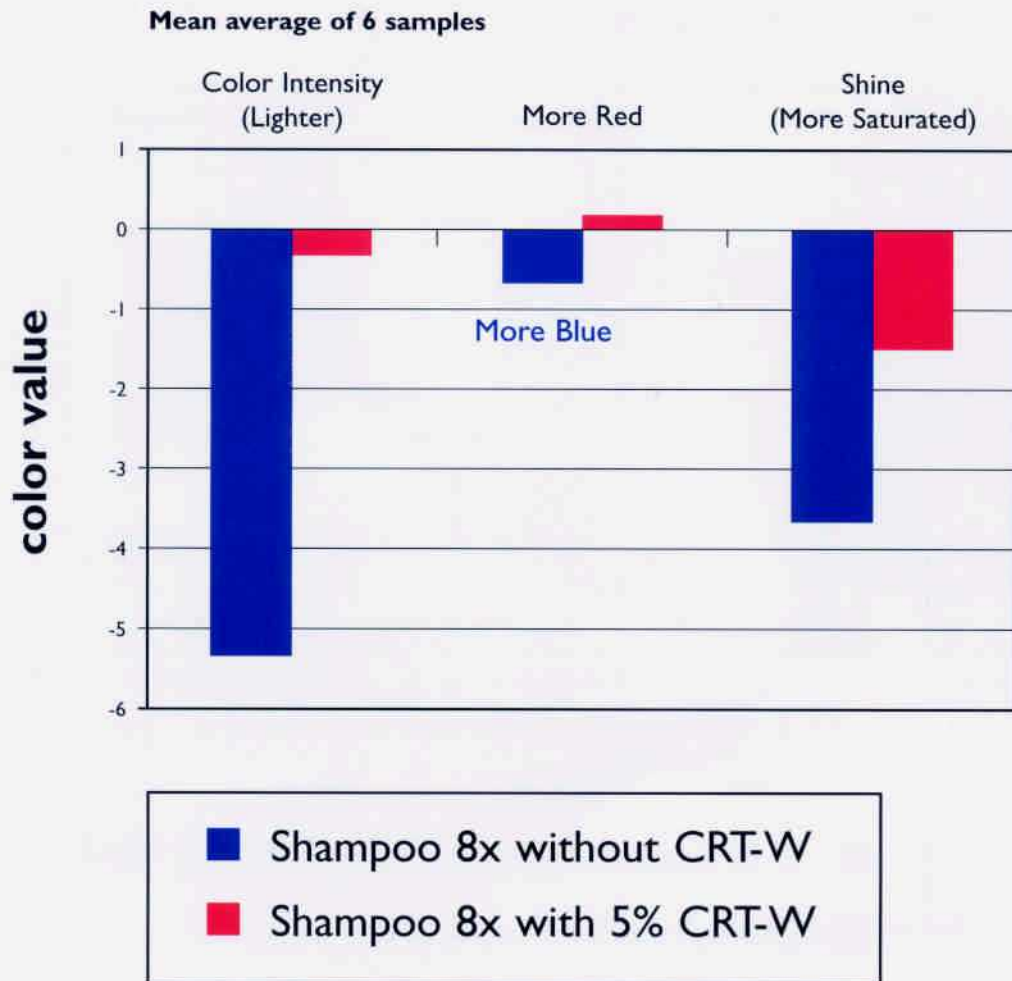
- **8x shampoo without CRT-W**
  - 3.63 Lighter
  - 0.74 More Blue
  - 3.39 More Saturated (duller)
- **8x shampoo with 5% CRT-W**
  - 0.94 Lighter
  - 0.68 More Blue
  - 1.11 More Saturated (duller)

# Color Retention Shampoo evaluation for hair dyed with Toco Magico Red 7RS



- “0” color value denotes dyed hair without shampooing (instrument control)
- Hair shampooed without CRT-W lost color becoming almost 8 times *lighter* in comparison to hair shampooed with the 5% CRT-W shampoo formula
- CRT-W also prevented significant loss of original *color* and *shine* which occurred after shampooing without CRT-W

# Color Retention Shampoo evaluation for hair dyed with FAMA Red 8RR



- “0” color value denotes dyed hair without shampooing (instrument control)
- Hair shampooed without CRT-W lost color becoming almost 5 times *lighter* in comparison to hair shampooed with the 5% CRT-W shampoo formula
- CRT-W also prevented significant loss of original *color* and *shine* which occurred after shampooing without CRT-W

# Rinse Off Conditioner

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## CONTROL

(1) Cetyl alcohol	2.80
Cetrimonium chloride	2.50
(2) PEG-7 Glyceryl cocoate	0.25
Tocopheryl acetate	0.05
(3) Deionized water	q.s.
Panthenyl ethyl ether	0.20
(4) Germaben II	0.80
Triethanolamine	q.s.
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	100.00
	(% by weight)

## CRT-W

(1) Control Conditioner	95.0 - 97.0
(2) <b>CRT-W</b>	3.0 - 5.0
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	100.00
	(% by weight)

## Procedure:

### CONTROL

Heat (1) and (3) separately to 70°C. Add (2) to (1) and mix until uniform. Add (3) to (1) and mix until uniform, while maintaining the batch temperature to 70°C. Add (4), adjust pH to 6.5 - 7.0 and mix until uniform. Cool to 35°C.

### CRT-W

Add CRT-W to the completed control conditioner at 25°C. Mix/sweep with moderate speed until uniform. Apply vacuum (if necessary) after mixing.

A premix of CRT-W with an equal amount of control conditioner may facilitate processing, depending on viscosities.

# Shampoo

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## CONTROL

(1) Ammonium laureth sulfate	15.00
Cocamidopropyl betaine	6.00
<b>HYDROSILK SL</b>	3.00
Glycol distearate	1.20
Sodium sesame amphoacetate	1.00
Sodium sweetalmond amphoacetate	1.00
(2) Deionized water	69.20
Guar hydroxypropyltrimonium chloride	1.20
Disodium EDTA	0.10
Citric acid	q.s.
(3) Cocamide DEA	1.50
(4) Germaben II	0.80
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	100.00
	(% by weight)

## CRT-W

(1) Control Shampoo	95.0 - 97.0
(2) <b>CRT-W</b>	3.0 - 5.0
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	100.00
	(% by weight)

## Procedure:

### CONTROL

Mix (2) with high agitation. Adjust pH to 7.0 with citric acid, and continue mixing until uniform. Heat (1) and (2) separately to 70°C. Add (2) to (1) and mix until uniform while maintaining the batch temperature at 70°C. Add (3) then (4), adjust pH to 6.5 - 7.0, and mix until uniform. Cool to 30 - 35°C.

### CRT-W

Add CRT-W to the completed control shampoo at 25°C. Mix/sweep with moderate speed until uniform. Apply vacuum (if necessary) after mixing.

A premix of CRT-W with an equal amount of control shampoo may facilitate processing, depending on viscosities.