



# Cola<sup>®</sup>Quat PDQ

Naturally-Derived Irritation-Free Conditioner

**INCI NAME** Polyquaternium-88  
**CAS NUMBER** 1869074-79-2  
**LISTINGS** US (TSCA); EU (REACH); Canada (NDSL)



**Cola<sup>®</sup>Quat PDQ** is a high molecular weight (15,000) polyquat based on naturally-derived dimer acid from a natural source of safflower oil. This unique molecule has no detrimental effect on viscosity when used with sulfates in shampoos and body washes. Conditioning benefits are due to the relatively high charge density. The molecule is amphiphilic and does not build up. Because of its cationic nature, it is highly substantive. Cola<sup>®</sup>Quat PDQ is a very safe polymeric conditioner.

**Cola<sup>®</sup>Quat PDQ** offers a more natural feel than typical quats without building up after frequent use.

## BENEFITS

- Prevents fly-away hair
- No acrylic monomers present
- Very water soluble
- Compatible with anionics
- Conditioning in the presence of anionics
- Superior wet comb properties

## APPLICATIONS

- Conditioning Shampoo
- Hair Conditioners
- Bath Gels
- Crème Rinses

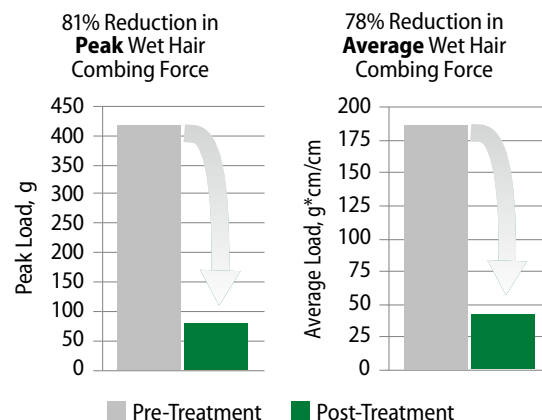
## COMBABILITY TESTING

A variety of conditioner prototypes were examined to determine the effect on combability under both wet and dry hair conditions.

### Conditioner Test Formulation

<b>Cola<sup>®</sup>Quat PDQ</b>	5.00
Hydroxyethylcellulose	1.50
Cetearyl Alcohol	5.00
Water, preservative	qs

**Results:** This formulation demonstrated good conditioning of bleached hair, with an 81% reduction in peak wet combing force and a 78% reduction in average wet combing force.



## TOXICITY

Cola<sup>®</sup>Quat PDQ test results include outstanding eye and dermal mildness, especially compared to other quats in natural formulations.

### Eye Irritation

**HET-CAM: Hen's Egg Test Chorioallantoic Membrane:** No ocular irritation potential in vivo, score of **1.5**.

### Acute Skin Irritation

**Repeat insult skin patch test:** On human volunteers - 50/50 Test Subjects: **no** visible skin reaction, **no** potential for dermal irritation.

## FORMULATION

### Extra Shine Conditioner

Formula # 1012

This formula is designed to provide mild, weightless conditioning and a healthy, brilliant shine without build-up. Features **Poly Suga®Quat S1210P** and **Cola®Quat PDQ** and ready to add extracts for a luxurious botanical experience.

TRADE NAME / INGREDIENT	%
1 Water	qs to 100.00
2 <b>Poly Suga®Quat S-1210P</b> / Polyquaternium-81	3.00
3 <b>Cola®Quat PDQ</b> / Polyquaternium-88	3.50
4 Lanette® O / Cetearyl Alcohol	7.00
5 Dow Corning® 556 / Phenyl Trimethicone	1.50
6 Green Tea Fragrance	0.10
7 Euxyl® K220 / Methylisothiazolinone (and) Ethylhexylglycerin (and) Aqua	0.15

#### Procedure:

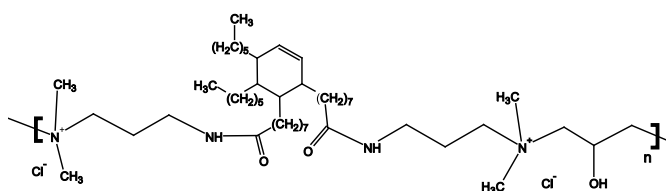
Heat water to 65°C with mixing. While heating, add 2,3. At 65°C add 4 and mix until completely melted. Homogenize and cool below 55°C. Add remaining ingredients.

#### Typical Properties:

Appearance: Opaque pH: 6.0 Viscosity: 30,000 cP

## TYPICAL PROPERTIES / STRUCTURE

Appearance	Clear Liquid
pH, (10% aqueous)	7.5
% Solids	31.0
Color, Gardner '98	5
GPC Avg. Molecular Wt.	15,000
1% active solution, 25° C, DI water	
Ross-Miles Foam Height, mm	
Immediate	135
1 Min.	115
5 Min.	105



Typically quats diminish the foaming properties of a personal care formulation. Testing demonstrates that Cola®Quat PDQ *does not diminish* the foam of typical cleansing formulations.

## FORMULATION

### Wrap N' Style

Formula # 1031

Formulation for conditioning and smoothing foam that adds protection and shine. Protects hair against heat and breakage, providing healthy and shiny look. Apply foam to hair, comb through, dry and style

TRADE NAME / INGREDIENT	%
1 Water	qs to 100.00
2 <b>Cola®Lac 426</b> / Isostearamidopropyl Morpholine Lactate	6.00
3 <b>Cola®Quat PDQ</b> / Polyquaternium-88	5.00
4 Liponate® SB-50 / PEG-50 Shea Butter	3.00
5 <b>Poly Suga®Mulse D9</b> / Sorbitan Oleate Decylglucoside Crosspolymer	2.00
6 Fragrance	0.10
7 Methylchloroisothiazolinone (and) Methylisothiazolinone	0.05

#### Procedure:

Combine ingredients in order. Mix until clear, heating to 40 – 45°C if necessary. Adjust to pH 5.0 – 5.5 with sodium hydroxide.

#### Typical Properties:

Appearance: Clear pH: 5.0 – 5.5 Viscosity: 20 cP

## ENVIRONMENTAL

Cola®Quat PDQ is truly a green conditioning agent and is inherently biodegradable, causing no harm to the environment and contributes to an environmentally safe waste stream.

## ADDITIONAL LISTINGS

 USDA Biopreferred Rating of **92**

## STORAGE AND HANDLING

Cola®Quat PDQ should be stored in closed containers. Cola®Quat PDQ is shipped in 55 gal. drums, net weight 450 lb. (204 kg.). Shelf life is 24 months from date of manufacture. A Safety Data Sheet is available at [www.colonialchem.com](http://www.colonialchem.com).



## Colonial Chemical

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*Innovative Specialty Surfactants*