

ABIL® UV Quat 50

Conditioning agent for hair fiber protection in rinse-off and leave-in application

- Efficient protection of hair color against fading in sun light.
- Protection of fiber integrity against damage by UV irradiation.
- High substantivity to hair surface from rinse-off applications.
- Effective in rinse-off applications like shampoo and conditioner.

Personal Care

INCI name (CTFA name)

Polysilicone-19

Chemical and physical properties (not part of specifications)

ABIL® UV Quat 50 is a silicone copolymer with methoxycinnamic acid, cocos alkyl and cationic groups.

Form	liquid
Appearance	slightly turbid
Active level	50%
Solvent	dipropylene glycol

Properties

ABIL® UV Quat 50 is used in hair conditioning shampoos, rinses and balms as well as in leave-in application to provide efficient protection of the hair fiber against UV-damage. As the product is cationic, it is substantive to the hair keratin, forming a thin protective layer which absorbs damaging UV irradiation.

The protective effect is proven for both, the integrity of the fiber structure itself and the color of the hair. While fiber protection is a key claim for conditioning formulations, the color protection efficiency is most attractive as it is a consumer perceivable property.

The fiber integrity is measured by means of tensile strength evaluation and differential scanning calorimetry. The tensile strength of tresses treated with ABIL® UV Quat 50 remains higher than control: With a use level of 4% ABIL® UV Quat 50 in a conditioning rinse, the reduction of tensile strength is reduced by about 40%. This is proven by a test using an equivalent of 2 days sun light exposure. In color protection ABIL® UV Quat 50 provides a visible protective effect against fading by sun light irradiation. Especially red shades are prone to fade in the sun. Using ABIL® UV Quat 50 at 2% level in a shampoo leads to a reduction of color fading by 50%, which means the color resists sun light twice as well than without ABIL® UV Quat 50.

Application

ABIL® UV Quat 50 is compatible with anionic surfactants. It can be used in shampoos and anionic post treatments for colorants with or without polycationic ingredients. The use in combination with cationic polymers helps to provide additional conditioning effects and supports the efficacy of ABIL® UV Quat 50.

In cationic hair conditioning formulations, hair balms or masks ABIL® UV Quat 50 provides the protective performance alone or in combination with cationic conditioning agents. It provides additional conditioning effect, especially a pleasant dry feel.

ABIL® UV Quat 50 can be used as deposition aid for other silicones.

Fig.1: Color fading after 2 days sunlight dose rate

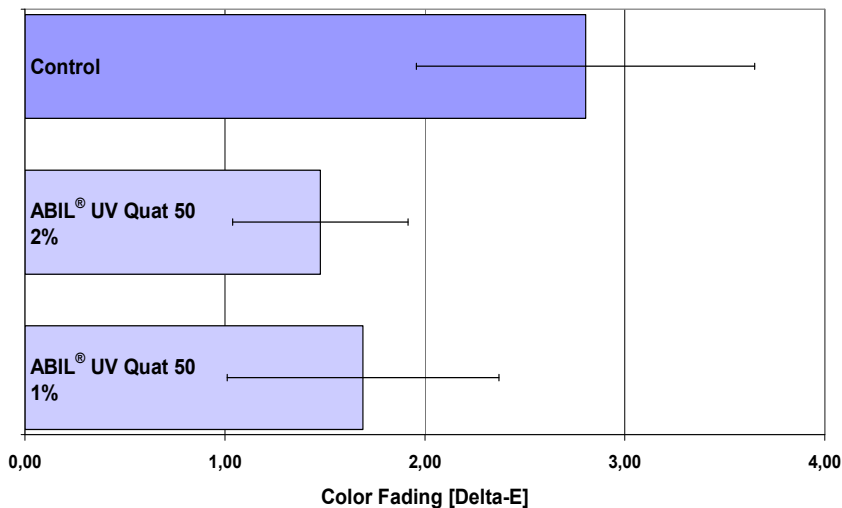


Fig.1 shows an example with a shampoo composition with 9% SLES, 3% CAPB, 0.15% cationic guar at pH 5.5 and a variation of the level of ABIL® UV Quat 50. With increasing use level of ABIL® UV Quat 50 the protection against color fading is increased. 2% ABIL® UV Quat 50 reduce color fading by the half.

Preparation

ABIL® UV Quat 50 is applied into the oily phase of an emulsion like formulation e.g. conditioner, balm or hair mask.

In shampoo formulations ABIL® UV Quat 50 is mixed with a concentrated surfactant (anionic nonionic or amphoteric) before further dilution with aqueous ingredients.

Recommended usage concentration

1.0 – 5.0 % ABIL® UV Quat 50.

Packaging

200 kg drum

Hazardous goods classification

Information concerning

- classification and labelling according to regulations for transport and for dangerous substances
- protective measures for storage and handling
- measures in case of accidents and fires
- toxicity and ecological effects

is given in our material safety data sheets.

Guide Line Formulations

Hair Mask AK 22/5	
Phase A	
ABIL® UV Quat 50	2.0 %
TEGO® Amid S 18 (Stearamidopropyl Dimethylamine)	1.0 %
TEGO® Alkanol 16 (Cetyl alcohol)	3.0 %
TEGINACID® C (Cetareth-25)	0.25 %
TEGOSOFT® DEC (Diethylhexyl Carbonate)	1.0 %
Phase B	
TEGO® Cosmo C 100 (Creatine)	0.5 %
Glycerin	2.0 %
Water	89.75 %
Citric acid (30 %) ad pH 5	0.5 %
Perfume, Preservative	q.s.
Preparation: Heat phases A and B up to 70°C. Stir B into A and cool down while stirring. Homogenize at 65°C, add the perfume at 45°C. Stir until the emulsion is cold.	

Hair Rinse AK 21/1	
Phase A	
ABIL® UV Quat 50	2.0 %
TEGO® Alkanol 16 (Cetyl alcohol)	2.0 %
Phase B	
VARISOFT® BT 85 Pellets (Behentrimonium Chloride)	1.0 %
Glycerin	2.0 %
Water	93 %
Perfume, Preservative	q.s.
Preparation: Heat phases A and B up to 70°C. Stir B into A and cool down while stirring. Homogenize at 65°C, add the perfume below 45°C. Stir until the emulsion is cold.	

Clear Conditioning Shampoo with UV absorbing properties AK 79/1	
VARISOFT® PATC (Palmitamidopropyltrimonium Chloride)	1.0 %
ABIL® UV Quat 50	1.0 %
Perfume	0.2 %
Water	55.8 %
Sodium Laureth Sulfate, 28%	32.0 %
TEGO® Betain F 50 (Cocoamidopropyl Betaine)	8.0 %
ANTIL® 171 (PEG-18 Glyceryl Oleate/Cocoate)	2.0 %
Preservative	q.s.
Preparation: Mix the ingredients in the given order. Viscosity: 5400 mPas (Brookfield)	

Styling Gel with Sun Protection Ringing Gel AK 66/3	
Phase A	
Water	48.0 %
Proyplene Glycol	2.0 %
Glycerin	11.0 %
ABIL® Soft AF 100 (Methoxy PEG/PPG-7/3 Aminopropyl Dimethicone)	0.5 %
Phase B	
TEGO® Alkanol IC 20 (Isoceteth-20)	14.5 %
ABIL® UV Quat 50	2.0 %
TEGO® Alkanol L 4 (Laureth-4)	10.0 %
Paraffinum perliquidum	6.0 %
TEGOSOFT® TN (C12-15 Alkyl Benzoate)	8.0 %
Mica; Titanium Dioxide; Iron Oxides (Timiron Splendid Gold, Merck)	0.05 %
Perfume, Preservative	q.s.
Preparation: Heat phases A and B separately up to 90°C. Stir B into A and cool down while stirring. Add the perfume below 55°C. Fill into (glass) jars at 50°C-55°C.	

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