

# Luviquat, UltraCare – An Effective Conditioning/Styling Polymer for Shampoos and Styling Mousses

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## Abstract

Luviquat UltraCare (Polyquaternium-44) is a new effective conditioning polymer for cleansing formulations. It provides outstanding wet and dry combability and is a lightweight conditioner with no build-up. Luviquat UltraCare adds rich lather creaminess in cleansing formulations and provides a pleasant and smooth hair feel. Due to its relatively high molecular weight and the branched structure it is also an excellent fixative for setting mousses in combination with other Luviquat grades, e.g. Luviquat Hold.

## 1. Introduction

The main function of shampoos is to clean the hair. During the last decades however, shampoo formulations have become more sophisticated. The majority of shampoo formulations on the market contain a cationic polymer beside the surfactant system. Cationic polymers are essential ingredients in shampoos. They improve many hair attributes, e.g. combability, feel, softness, smoothness, shine, resistance to damage and reduction of split ends. Moreover, they improve the texture and creaminess of the lather. These cationic polymers are highly efficient in concentrations typically in the range of 0.1% and 0.5%. It is known that several cationic polymers can build-up on the hair to an undesirable extent. Therefore the ease of removal from the hair is an important factor.

Cationic polymers only function as conditioners if they precipitate onto the hair when the shampoo is rinsed-off (Ref 1, 2) . The major requirement for a high efficacy seems to be a high-molecular weight of the polymer and a cationic charge to be substantive to the negatively charged hair. These high molecular weight polymers are not only interesting for cleansing formulations but also in styling mousses to improve the setting properties.

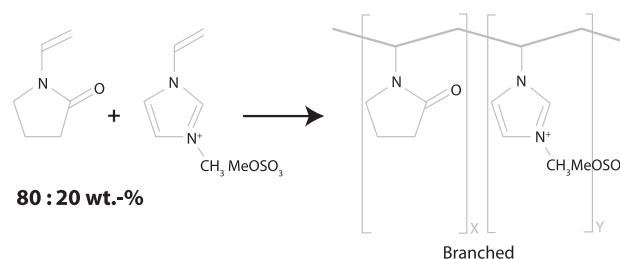
Fig. 1: Luviquat UltraCare – chemical composition and specification

Chemical Composition	
Copolymer of N-Vinylpyrrolidone (VP) and Methyl vinylimidazolium methylsulfate (QVI) in Water	
INCI: Polyquaternium-44	
Specification	
• Solids Content (%):	12.5 - 13.5
• pH value:	5-7
• Viscosity (mPas):	4000 - 18000
• Residual Monomers (ppm VP):	max. 50

## 2. Luviquat UltraCare – An Effective Conditioning Polymer in Cleansing

The chemical composition and the specifications of Luviquat UltraCare are depicted in Fig. 1.

Fig.2: Luviquat UltraCare – an improved Polyquaternium-44



### New Polymerization process:

- Increases the solids content to 13%
- Reduces the amount of gelled particles
- Improves the formulation properties

Still ensures the conditioning Properties like our well-known Luviquat Care