Personal Care Ingredients
Our assortment of personal care ingredients includes UV filters, active ingredients, cosmetic polymers, surfactants and effect pigments. With this range of high quality products, we are the partner of choice of the personal care industry in the areas of hair care, skin and sun care, oral care, shampoos and conditioners, and color cosmetics.

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www.personal-care.basf.com

Luviset® Shape –
Shape Your Style

Personal Care Ingredients

Crunchy Hold
Fast Drying + Low Tack
Outstanding Sprayability
Wide VOC Range

BASF
The Chemical Company

Feel **the crunch** – **shape** your style

Luviset® Shape is a unique styling polymer specifically developed for fast drying, non-tacky, aqueous based hair sprays providing long-lasting crunchy hold.

Luviset® Shape has outstanding sprayability characteristics generating a fine spray pattern which produces no foam or beading on the hair.

This property makes Luviset® Shape an excellent choice for low VOC formulations with high water content.

Luviset® Shape is supplied as a pre-neutralized polymer in a water/ethanol solution. It is easy-to-use and contains no preservatives.

Luviset® Shape's benefits in brief:

- Long-lasting crunchy hold even under the most humid conditions
- Non-tacky feel during application and after drying
- Fast drying, non-foaming fine spray designed for high water content formulas
- Excellent performance in the 35 – 80 % VOC range

Technical **profile**

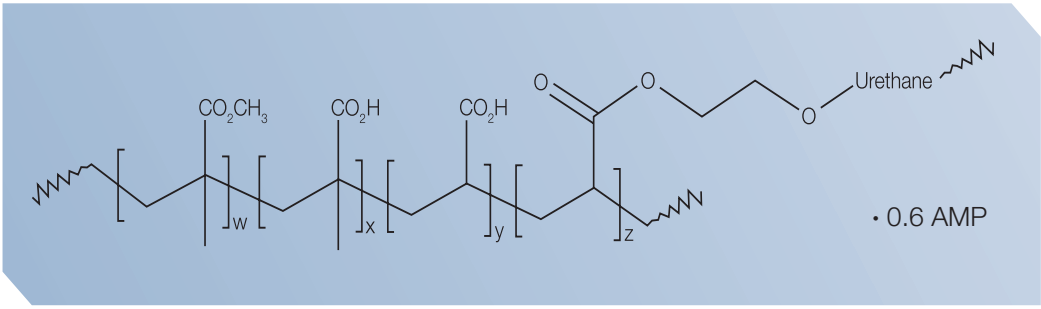
Luviset® Shape

INCI:
Polyacrylate-22

Specification

• Solids content	32 – 36 %
• Ethanol	28 – 35 %
• Water	29 – 40 %
• K-value	28 – 34
• Acid value (total)	38 – 45
• Pre-neutralization (AMP)	58 – 65 %[1]

[1] for further neutralization details see calculation formula on page 6

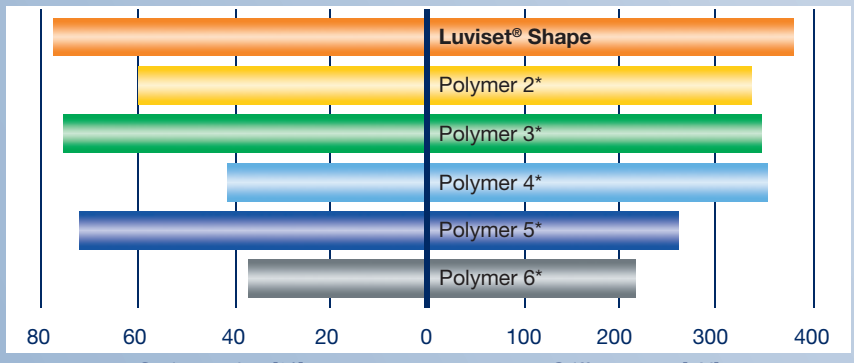


Chemical composition: Methyl methacrylate / Methacrylic acid / Acrylic acid / Urethane-Acrylate Copolymer

Regardless of the weather – with Luviset® Shape your style remains the same!

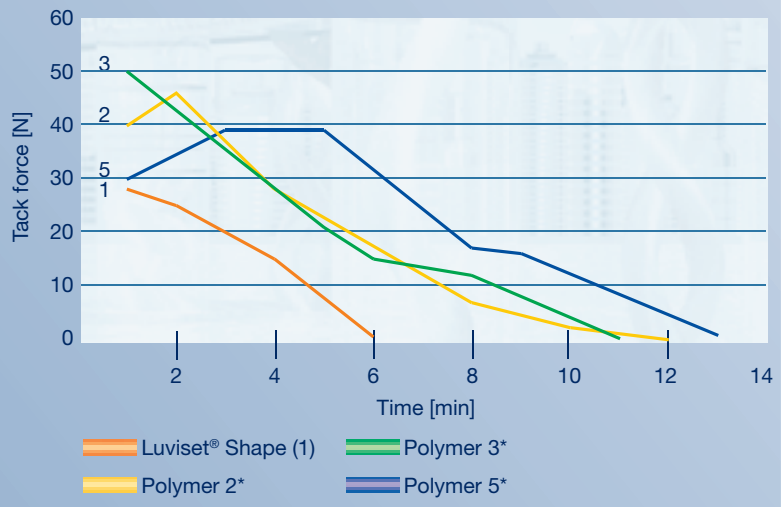
Compared to other fixative resins Luviset® Shape exhibits exceptional stiffness as well as excellent humidity resistance when used in hair styling products. The combination of hold and humidity resistance make Luviset® Shape an excellent choice for long-lasting, crunchy hold formulas – whatever the environmental conditions.

Figure 1: Crunchy hold



* for further information see on page 7

Figure 2: Tack during drying



Film from 55 % VOC solution: 10 % polymer; 20 °C, 65 % r.h.

Quick drying – without tack!

In 55 % VOC hair sprays Luviset® Shape is significantly less tacky than an equivalent formula containing other styling polymers (as shown in Figure 2).

The film formed by Luviset® Shape dries almost immediately after spraying without tack guaranteeing a pleasant styling experience during and after application.

Sprayability at its best!

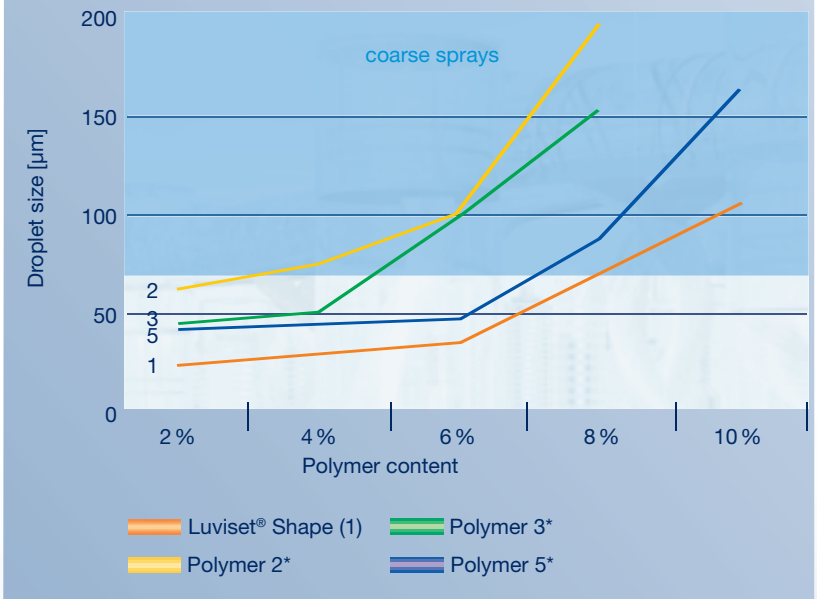
Luviset® Shape gives very low viscosity formulations even when water content is high. This allows for a fine spray pattern and even delivery leading to invisible but highly effective hair style control.

Luviset® Shape is the perfect choice for a wide variety of spray applications overcoming the toughest challenges.

It is time to return to a smooth, elegant spray!

With Luviset® Shape this can be accomplished while complying with low VOC regulations.

Figure 3: Spray particle size

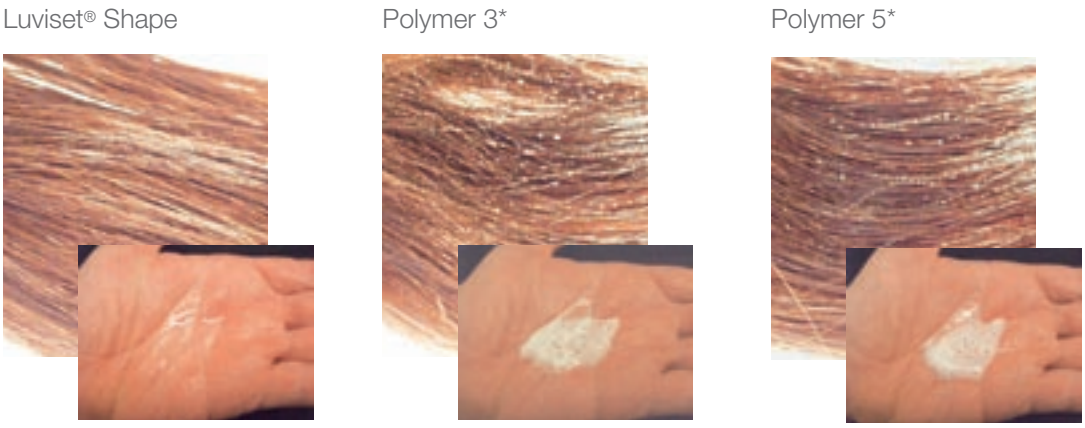


Aerosol spray: 55 % VOC, 40 % DME

Formulation breakthrough! A non-foaming low VOC hair spray with all-day hold

Luviset® Shape's unique features enable the most difficult of formulas (i.e. high levels of water) to deliver an elegant, fine, non-foamy spray.

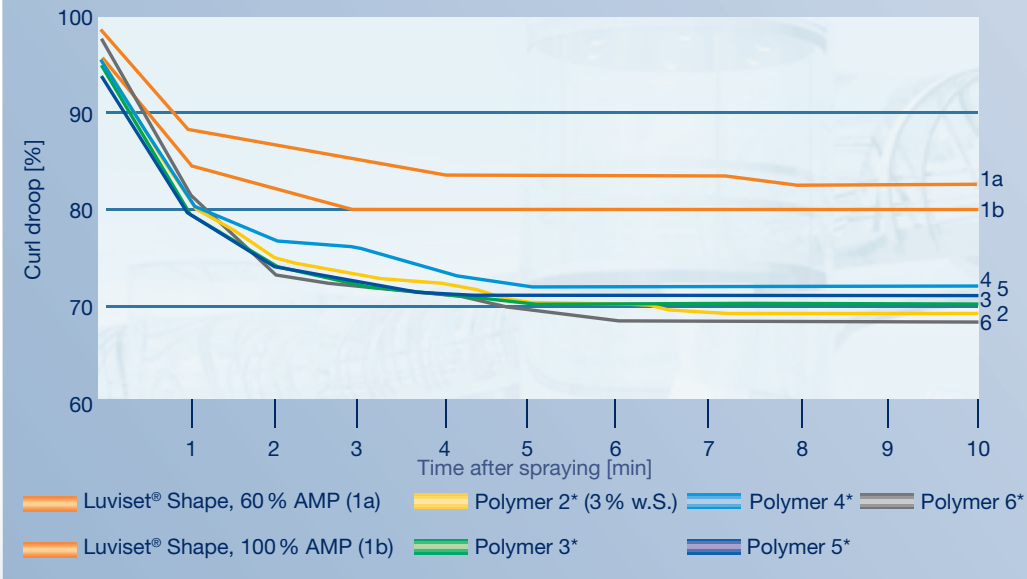
The pictures below show three 55 % VOC hair spray formulations, each containing the same amount of a fixative polymer, immediately after spraying at close range to the hair and to the hand respectively. Luviset® Shape clearly stands out by showing no tendency to foam on the hand or to bead on the hair. After drying the style is maintained throughout the day even when combed out with no visible traces of residue.
There is no need to compromise, Luviset® Shape produces a clear, non-whitening and non-beading hair spray.



Overcome the challenges of low VOC hair sprays – keep your hair style in shape!

With Luviset® Shape in your formula you don't need to worry about loss of curls and style associated with traditional aqueous hair sprays. Luviset® Shape minimizes initial curl droop, as shown in Figure 4 below. This is especially important to minimize the negative attributes of traditional 35 – 55 % VOC products.

Figure 4: Initial curl droop



Aerosol spray: 5 % polymer, 55 % VOC, 40 % DME; 20 °C, 65 % r.h.

* for further information see on page 7

Formulation examples

55 % VOC Shaping Aerosol Spray

This formula is a 55 % VOC aerosol spray that provides good hold, good curl retention, and excellent sprayability. Also it gives crunch and dries fast.

Ingredients	% w/w
Phase A	
SD Alcohol 40 B (Alcohol Denatured)	19.65
AMP-95 (Aminomethyl Propanol)	0.14
Monacor™ BE (MEA Borate & MIPA Borate)	0.20
D – Panthenol 75W (Panthenol)	0.35
Pear Berry 862151 (Fragrance)	0.05
Luviset® Shape (Polyacrylate-22)	9.32
DI Water	38.32
Phase B	
Dimethyl Ether	32.00

Procedure
Mix all ingredients in order with adequate agitation. Fill into appropriate containers and charge with propellant.

Appearance
Aerosol density: 0.82 g/mL
Vapor pressure at 23 °C: 4.14 bar

55 % VOC Strong Hold Pump Spray

This formula is a 55 % VOC pump spray that provides strong hold, good curl retention, and excellent sprayability. Also it gives crunch and dries fast.

Ingredients	% w/w
SD Alcohol 40 B (Alcohol Denatured)	49.40
AMP-95 (Aminomethyl Propanol)	0.48
D – Panthenol 75W (Panthenol)	0.35
Cucumber Tea 86217 (Fragrance)	0.05
Emery® 917 (Glycerin)	0.15
Luviset® Shape (Polyacrylate-22)	15.70
DI Water	33.87

Procedure
Mix all ingredients in order with adequate agitation and fill into appropriate containers.

Appearance
Clear liquid, pH: 8.8
Density: 0.88 g/cc

Neutralization

Luviset® Shape is an anionic polymer which is supplied as a hydroalcoholic solution, where the polymer is neutralized 60 % with AMP. The polymer can be used as is, or can be neutralized further if needed.

The quantity of **additional neutralization** agent (60 – 100 %) is calculated as follows:

$$N = X \cdot Y \cdot Z \cdot A/100$$

where **N** = Quantity of neutralizing agent, g
X = Weight of Luviset® Shape, kg
Y = Acid value
Z = Degree of **desired neutralization** minus (-) degree of **exact neutralization given in COA,** %
A = Factor (e.g. for AMP = 1.59)

Example:

For 1 kg of Luviset® Shape (60 % pre-neutralized; exact value given in COA) with an acid value of 40.0, the following quantity of AMP is required:

For 100 % neutralization
$N = 1 \cdot 40.0 \cdot (100 - 60) \cdot 1.59/100 = 25.44$ g AMP

For 80 % neutralization:
$N = 1 \cdot 40.0 \cdot (80 - 60) \cdot 1.59/100 = 12.72$ g AMP

BASF fixative polymers to keep up with the times: **winning the low VOC challenge**

Over the years, BASF has provided continuous innovation in the field of fixatives for hair sprays allowing our customers to meet the ever changing requirements of the market place.

BASF offers a diverse range of styling polymer chemistries for water-based hair spray applications.

	Luviset® Shape	Luvimer® Pro 55	Luviset® PUR
Sprayability in 55 % VOC, water containing aerosols	Excellent	Good	Excellent
Sprayability in 0.7 MIR, water containing formulations	Excellent	Medium	Very good
Setting / Hold	Very strong crunch/flex	Strong crunch	Natural-Medium flex
Curl retention	Excellent	Good	Very good
Initial curl droop	Excellent	Good	Very good

* Polymer 2 = Octylacrylamide / Acrylates / Butylaminoethyl Methacrylate Copolymer
Polymer 3 = Acrylates / Hydroxyesters Acrylates Copolymer
Polymer 4 = Diglycol / CHDM / Isophthalates / SIP Copolymer
Polymer 5 = Acrylates Copolymer
Polymer 6 = Octylacrylamide / Acrylates / Butylaminoethyl Methacrylate Copolymer