



# Flexicare™ HP-1140

Acrylates copolymer

## Overview

- 40% active Acrylates copolymer hair care emulsion polymer
- Firm, volumizing, humidity resistant hold
- Salon-Quality firm hold styling agent
- Low build-up with form feel
- Easy washout
- Compatible with nonionic, amphoteric and anionic surfactants
- Enhanced activity in heat-applied “amplified” treatments
- Low tack film forming agent
- Imparts body, volume with humidity resistance
- INCI Name: Acrylates copolymer

## Applications

- Foam mousse
- Hair fixing
- Hair spray
- Foam stabilizing
- Styling foam
- Pump and low-VOC aerosol products
- Amplified styles

## Technical Information

Flexicare HP-1140 is an efficient, cost effective and easy-to-use hair care polymer suitable for use in formulations which demand superior performance, exceptional appearance, smooth flow (shear-thinning) and suspending or stabilizing properties in hair fixative systems.

Flexicare HP-1140 is supplied as a milky-white aqueous liquid emulsion for ease of use for mixing into any hair fixative formulation. This, along with broad compatibility with typically used cosmetic ingredients, makes the HP-1140 polymer ideal for use in hair and skin care applications.

## Formulary

Flexicare HP-1140 is a low viscosity acrylic emulsion polymer designed for use in pump and low-VOC aerosol mousse hair fixative and styling products. When neutralized, HP-1140 delivers a practically colorless film forming solution that allows a formulator to produce hair sprays, hair gels and styling mousse products with volume, humidity resistance and dry combability.

HP-1140 delivers firm hold performance and curl retention with humidity resistance and good wash-out removability for no residue or buildup. The emulsion form allows very low viscosities in high water formulations, with molecular weights optimized for humidity resistance, imparting a light, cushiony feel and an enhanced tactile experience in use.

## Typical Properties

PROPERTY	VALUE
Appearance	White emulsion
Odor	Mild
Ionic character	Anionic
Water solubility	Dispersible, soluble on neutralization
Active content, %	38.5-41.5
Acid Value, mgKOH/g	23-31
pH (as is)	2.5 to 3.5
Density@25°C	1.05±0.04
Boiling Point	Approx. 100°C
Flash point	Does not ignite below 100°C
Storage	Protect from freezing
Shelf life	12 months

## Packaging and Handling

Flexicare HP-1140 is available in:  
275 gallon totes (Net Wt. 2200 lbs)  
55 gallon plastic drums (Net Wt. 440 lbs)  
5 gallon pails (Net Wt. 40 lbs)

Refer to the Safety Data Sheet (SDS) for information on the safe use, handling, and disposal of this product.

DOT Classification: Non-Regulated

Whether you're looking for a replacement product or an ingredient for a specific attribute, give us a call. We can provide assistance based upon your particular formulation requirements and composition; please feel free to contact us.

*Please refer to back page for important information*

## Flexicare HP-1140

### Firm hold hair care polymer

Flexicare HP-1140 is an efficient, cost effective and easy-to-use hair care polymer designed to optimize all performance properties required for low VOC hair fixative systems. Flexicare HP-1140 is supplied as a milky-white aqueous liquid emulsion for ease of use for mixing into any hair fixative formulation.

Flexicare HP-1140 produces a clear to translucent solution in ethanol/water when neutralized >85%. Combine with nonionic polymers for increased viscosity. Care must be taken in degree of neutralization for compatibility with other anionic polymers, cationic ingredients and cationic polymers with high charge density.

### Suggested use levels

- 5-15% as supplied for Hair Spray formulations
- 1-10% as supplied for Styling Creams and Mousses

### Neutralization

The % neutralizing agent required to neutralize a given formula % of HP-1140 can be readily calculated from the ratio of the HP-1140 Acid Value (AV), eg. HP-1140 = 23-31, and the Base Value (BV) eg. AMP=630, of the neutralizing agent:

$$\% \text{ neutralizing agent} = \% \text{ HP-1140} \times \text{AV/BV} \times \frac{\text{Desired degree of neutralization}}{100}$$

for example 10% HP-1140 with an Acid Value (AV) of 25 is 90% neutralized with 0.36% of AMP with a Base Value (BV) of 630:

$$\% \text{AMP} = 10\% \text{ HP-1140} \times (25/630) \times (90/100) = 0.36\%$$

Base Value can be determined directly by titration of the neutralizing agent expressed in mgKOH/g or calculated by:

$$\text{BV} = (56,100/\text{MW}) \text{ of neutralizing agent} \times \text{concentration of neutralizing agent}/100$$

for example AMP (MW = 89.1):

$$\text{BV} = (56,100/89.1) = 630$$

or 50% AMP:

$$\text{BV} = (56,100/89.1) \times (50/100) = 315$$

For crisper on-hair feel, consider neutralization with inorganic bases such as potassium hydroxide (KOH).

## Functionality

Flexicare HP-1140 emulsion polymer neutralizes to a low viscosity solution, providing firm hold as the formulations below illustrate:

Firm Hold Hair Spray Pump	
Ingredient (INCI Name)	Wt. %
Water	to 100
Flexicare HP-1140 (Acrylates copolymer)	10.0
AMP (Aminomethyl propanol)	0.36
Silsoft 900 (PPG-12 Dimethicone)	0.05
SD Alcohol (Alcohol Denat.)	55.0
Fragrance	q.s.
Charge water and HP-1140 emulsion polymer with mild agitation. Add AMP to 90% neutralization. Add remaining ingredients. Solution will transition from opaque milky white to final clarity.	
Firm Hold Aerosol Hair Spray 55% VOC	
Ingredient (INCI Name)	Wt. %
Water	34.59
Flexicare HP-1140 (Acrylates copolymer)	10.0
AMP (Aminomethyl propanol)	0.36
Silsoft 900 (PPG-12 Dimethicone)	0.05
SD Alcohol (Alcohol Denat.)	22.0
Dymel A (Dimethyl ether)	33.0
Charge water and HP-1140 emulsion polymer with mild agitation. Add AMP to 90% neutralization. Add remaining ingredients thru SD Alcohol, mixing until homogeneous. Solution will transition from opaque milky white to final clarity. Fill containers and charge propellant (dimethyl ether).	

INCI Name: Acrylates copolymer

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