



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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