

Conditioning Agent

Activsoft C-17

INCI Name: Guar Hydroxypropyltrimonium Chloride

CAS No.: 65497-29-2 EINECS No.: Exempt Polymer

Activsoft C-17 is a highly charged cationic polymer that is commonly used as a conditioning agent in shampoos, cream rinse conditioners, shower gels, body washes, and skin cleanser formulas.

Derived from the guar bean, the backbone of the polymer is a Mannose-Galactose Polysaccharide that has been quaternized to enhance substantivity to hair and skin. Typically used in formulations at 0.10% to 0.50% concentration levels, Activsoft C-17 is completely compatible with most common anionic, cationic and amphoteric surfactants and is ideally suited for use in two-in-one conditioning shampoos and moisturizing skin cleansing products. When used in personal cleansing formulations, Activsoft C-17 imparts a soft, elegant after-feel to the skin and also enhances wet comb and dry comb properties to shampoos and hair conditioning systems. Other performance benefits of Activsoft C-17 are identified below.

Activsoft C-17 is naturally derived from the guar bean plant.

Applications

- Two-in-one shampoos
- Styling gels and mousses
- Shower gels and body washes
- Bar soaps and syndet bars
- Cream rinse conditioners
- Facial cleansers
- Liquid hand soaps

Performance Properties

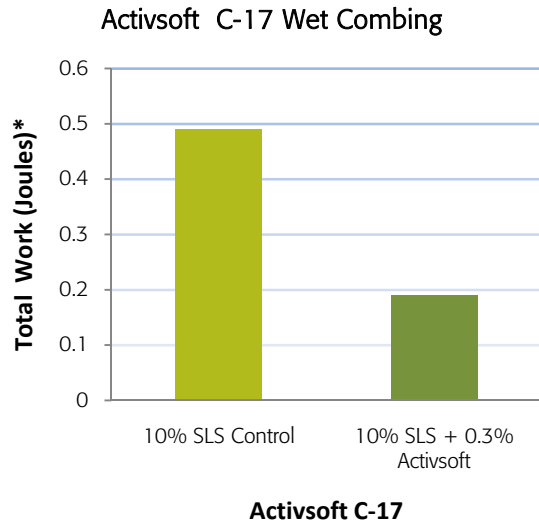
- Enhanced ease of wet hair combing
- Improved hair manageability
- Increase active delivery of silicone From personal cleansing formulations
- Enhanced ease of dry hair combing
- Improved foam quality, stability and texture
- Impart soft, elegant after-feel to the skin



TYPICAL PROPERTIES

Not intended for use in preparing specifications

Appearance	Yellow, Free Flowing Powder
Odor	Slight Amine
Particle Size Thru 100 Mesh:	100%
Particle Size: Thru 200 Mesh:	80%
% Moisture	6.0 – 10.0
pH (1% Aqueous):	9.0 – 11.0
% Nitrogen (Extracted)	1.7 – 2.0
Viscosity (cps), 2 Hours	2,000 – 3,000
Plate Count, cfu/g:	50 max (<10 typical) tentative
Mold, cfu/g	50 max (<10 typical) tentative
Yeast, cfu/g	50 max (<10 typical) tentative



* Differences are statistically significant at $p < 0.01$ (two-tailed test)

Recommended Use Directions for Aqueous dispersions/solutions

Activsoft C-17 is a quaternized guar polymer that is readily dispersible in room temperature water. Aqueous dispersions can easily be prepared by slowly blending the Activsoft C-17 powder into the water, while maintaining moderate agitation. Once the Activsoft polymer is completely dispersed in water, an acidic pH adjustment (4.5-5.5) is required to hydrate and solubilize the cationic guar. Any commonly used acid such as citric, phosphoric, or hydrochloric acid, may be used for this purpose. With pH adjustment, the system will clear slightly, and an increase in viscosity will be noticed. For best results, it is recommended that smooth, moderate agitation be used during this pH adjustment process. Slightly warming (35-40°C) of the system will facilitate the hydration process. After the Activsoft polymer has been hydrated, the system may be adjusted to the desired pH range without loss of viscosity. The resulting aqueous systems will appear slightly hazy when used at typical formulation use levels (0.1-0.5%).

Formulated Systems

While Activsoft C-17 is easily dispersed and hydrated in water, special techniques are recommended for its use in formulated systems. For best results, it is suggested that the Activsoft powder be dispersed in water with moderate agitation. Once the Activsoft polymer is completely dispersed, blend the remaining surfactant ingredients into the system and mix until uniform. Next, adjust the pH of the system to 5.0 – 5.5 with any common acid (citric, phosphoric, hydrochloric, etc.), as needed.

Following this pH adjustment, warm the system to 40-50°C with moderate agitation. As the system is warmed, it should clear slightly. Once the system is uniform, the pH of the system may be adjusted to the desired range (pH 4-10) without loss of viscosity.

It is important to note that it is not recommended that the Activsoft polymer be hydrated via pH adjustment prior to the addition of the surfactant ingredients. If it is hydrated prior to the surfactant additions, undesirable gelling may occur.

Suggested Formulations

Hair care, Skin care

Pearlescent conditioning body wash AC002 featuring Activsoft C-17

	INCI Ingredients	Tradename (Supplier)	% w/w
A	Water		q.s to 100
	Trisodium Ethylenediamine Disuccinate	Natrlquest E30 (Innospec)	0.10
B	Guar Hydroxypropyltrimonium Chloride	Activsoft C-17 (Innospec)	0.30
C	Sodium Lauryl Sulfate (30% soln)	Calfoam SLS-30 (Pilot)	50.00
D	Cocamidopropyl Betaine (35% soln)	Mirataine BET C-30 (Rhodia)	12.00
E	Cocamide MEA	Cocamide MEA (Cedar)	0.25
F	Glycol Distearate	Ethylene Glycol Distearate (Cedar)	1.25
G	Preservative		q.s.
H	Citric Acid (50% soln)		q.s to pH 5.5-6.5
I	Sodium Chloride		0.25-1.25

Preparation Procedure

1. Dissolve Natrlquest E30 in deionised water.
2. With smooth agitation, slowly blend Activsoft C-17 into system. Mix until completely dispersed.
3. Slowly blend in Sodium Lauryl Sulfate. Mix until uniform. Warm system to 50°C with mixing.
4. Blend in Cocamidopropyl Betaine. Mix until uniform.
5. Blend in Cocamide MEA. Continue heating with mixing to 70°C.
6. Blend in Glycol Distearate. Mix until completely dispersed and then remove heat. Cool with smooth mechanical agitation to 30-35°C.
7. Add preservative and mix until uniform.
8. Adjust pH of system to 5.5 – 6.0 with citric acid solution as needed.
9. Cool to room temperature and add Sodium Chloride incrementally as needed to achieve viscosity of 5,000 – 10,000 cps.

Properties

Appearance	Pearlescent solution
pH	5.5 – 6.5
Viscosity*	5,000 – 10,000 cps
Stability	Passed 1 month at 45°C, 3 cycles freeze thaw

*Brookfield DV-E @ 10rpm, 25°C, #3 spindle

Crème rinse conditioner AC071

	INCI Ingredients	Trade Name (Supplier)	% w/w
A	Water		q.s. to 100
	Guar Hydroxypropyltrimonium Chloride	Activsoft C-17 (Innospec)	0.15
B	Cyamopsis Tetragonoloba (Guar) Gum	Activsoft S (Innospec)	0.75
	Glycerin		2.00
C	Quaternium-75	Condicare CT [†] (Innospec)	8.00
	Citric acid solution (50%)		q.s. to pH 3.5 – 4.0
D	Dimethicone PEG/PPG-20/23 Benzoate	Finsolv® SLB-101 (Innospec)	0.80
	Cetearyl alcohol		2.00
E	Preservative		q.s.

Preparation Procedure

1. Disperse slowly Activsoft C-17 in deionized water with rapid mixing until fully dispersed.
2. Add slowly premix B and mix and heat to 70°C.
3. Add and mix Condicare CT into the system.
4. Add citric acid solution to adjust pH to 3.5 – 4.0 and continue to heat at 70°C.
5. Add and mix Finsolv® SLB-101 and cetearyl alcohol into the system until uniform.
6. Start to cool down and carry on mixing until below 25°C.

Properties

Appearance	White lotion
pH	4.5 – 5.0
Viscosity*	10,000 – 15,000 cps
Stability	Passed 1 month at 45°C, 3 cycles freeze/thaw

*Brookfield DV-E @ 5rpm, 25°C,

[†]Not EINECS approved

For further information, please email your region:

Americas: americas-ac@innospecinc.com

Europe, Middle East and Africa: emea-ac@innospecinc.com

Asia-Pacific: aspac-ac@innospecinc.com www.innospecinc.com

The facts stated and the recommendations made are based on our own research and/or the research of others, and are believed to be accurate. No guarantee of their accuracy is made, however, and unless otherwise expressly provided by law or in written contract, the materials are sold without warranties, expressed or implied, in particular without guarantee as to suitability for particular purpose. Innospec assumes no responsibility for injury or damage to users or third parties. Recipient agrees to assume all risk and liability whether used singly or in combination with other materials. Issue No. 4 /2010

