



ArmoSoft® DEVQ

Biodegradable fabric softener active with superior fiber adsorption properties and storage stability

The conditioning active that delivers uncompromised softness and effectively cares for the fabric and environment

ArmoSoft DEVQ is a vegetable-based esterquat designed to be used as a conditioning active in fabric softening / conditioning formulations. Readily biodegradable, ArmoSoft DEVQ exhibits very similar cationic fiber adsorption properties as DHTDMAC, the gold standard for fabric softening active. This differentiating property allows ArmoSoft DEVQ to deliver more superior hand feel attributes such as softness and smoothness. This favorable feature is attributable to the unique chemistry of ArmoSoft DEVQ which results in an almost 100% composition of di-ester – the key component that impacts hand feel in a positive way.

ArmoSoft DEVQ
Di ethyl ester dimethyl ammonium chloride

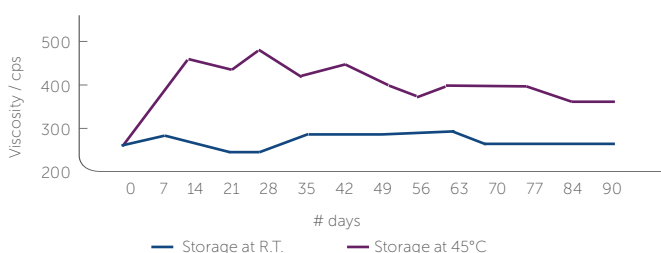
Almost 100% di-esterquats

TEQ
Triethanolamine esterquats

25% monoesterquats
50% di-esterquats
25% tri-esterquats

ArmoSoft DEVQ demonstrates better resistance to hydrolysis, making fabric softener formulations less susceptible to storage stability issues such as separation, sedimentation and broad viscosity swings. This attribute is particularly valuable for household fabric softener products which are typically sold over shelf and require flexible inventory management.

Storage stability of fabric softener formulated with 10% ArmoSoft DEVQ



Key benefits for different markets

Commercial laundry

- Effective cationic adsorption reduces friction during extensive repeated wash to retain fabric resilience
- Outstanding hand feel attributes support the highly prized service features for hospitality industries
- Offers good environmental profile through its readily and ultimately biodegradable properties

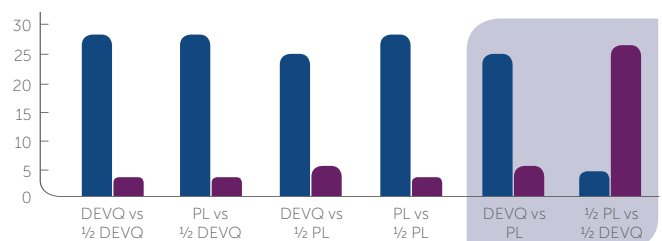
Household laundry

- Delivers uncompromised soft, fluffy finish to clothing and linen to improve sensorial experience and reduce skin chaffing
- Reduced static cling facilitates ironing
- Reduces abrasion during wash to extend clothing life
- Storage stability ensures performance consistency in every wash

Formulators

- Easy to formulate – achieve functional viscosity with reduced formulation complexity
- Storage stability – formulate to extend shelf life and maintain performance consistency
- Optimize hand properties – elevate softness without increasing active content
- Optimize existing formulation – leverage benefits as a performance boosting additive

Softening panel test: DEVQ (17.5%) vs Private Label (std Esterquat 17.5%)



On an equal active basis, ArmoSoft DEVQ outperforms standard esterquat for softening performance

Technical properties

Active content	(Mw=647) 78-82%
Appearance	liquid at 150°F
Color	≤ 3.5 Gardner
Free acid	≤ 0.04 meq/g
Free amine	0.001-0.004 meq/g
Methyl chloride	≤ 130 ppm
Moisture	≤ 0.3%



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Nouryon

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