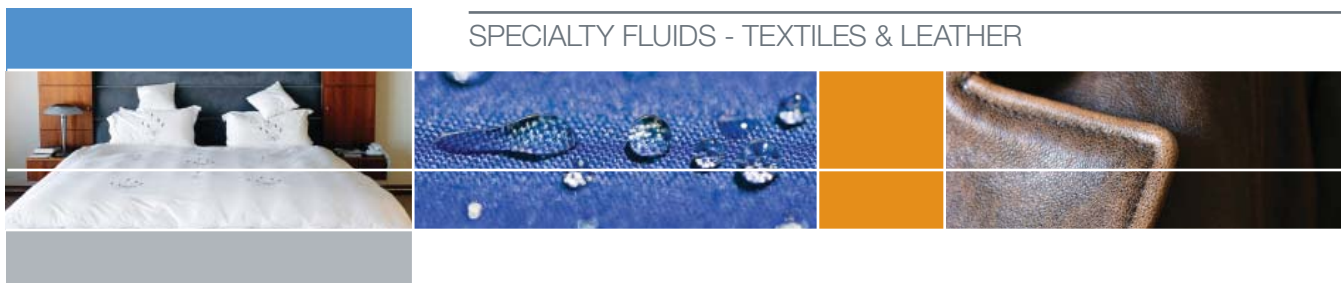


MAGNASOFT* STE

textile enhancer

SPECIALTY FLUIDS - TEXTILES & LEATHER



Magnasoft STE textile enhancer is a 100% actives linear silicone copolymer with high molecular weight, yet manageable viscosity, developed and patented by Momentive Performance Materials to deliver excellent aesthetics, hydrophilicity and processability. It provides silky hand-feel combined with excellent hydrophilicity and stability in textile finishing that can help textile retailers meet the increasing consumer demands for garments that are comfortable to wear, have a silky look, touch and feel and can be marketed as “breathable” garments. These features are best achieved by improving the general aesthetics of the garment.

(continued on page 2)

Key Features and Typical Benefits

- provides silky, drape-able and in-depth softness with optimized dry hand-feel on virtually all types of fabrics, particularly cotton and cotton blends
- promotes quick absorption of water and perspiration with minimal impact on the hydrophilic nature of cotton and cotton blends
- increases hydrophilicity in synthetic fibers and fabrics
- enhances durable softness to home laundry
- 100% actives; linear silicone copolymer
- easily emulsified with simple mixer
- generates emulsions that are typically extremely stable under high shear, wide pH range and high temperature
- causes virtually no yellowing of white and light shaded fabrics
- does not typically affect the color shade on even dark color fabrics

Potential Applications

- virtually all types of fabrics and colors
 - cotton
 - cotton blends
 - synthetics
 - cellulose
- textile finishing
- laundry care

Typical Physical Properties

Property	Unit	Value
Appearance	–	Pale yellow fluid
Active Contents	%	100
Flash Point	°C (°F)	66 (150)
Viscosity at 25°C	cSt	7,000
Density at 25°C	g/cm ³	1.00

Typical data are average values. The actual values may vary and should not be used as specifications. Product specifications are available upon contacting Momentive Performance Materials sales office

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(continued)

Up to now, silicone suppliers responded by launching hydrophilic silicones that improve the overall comfort of the garment but deliver unexciting type of hand feel. On the other hand, aminosilicones deliver excellent slickness but are very sensitive to process conditions at the textile mill.

Magnasoft STE textile enhancer delivers a luxuriously silky and drape-able softness with natural, cotton-like hand-feel to virtually all types of fabric and garment, particularly cellulose and cellulose blends. Fabrics treated with Magnasoft STE textile enhancer quickly absorb water and perspiration and, remarkably, retain the hydrophilicity even after extreme dry/cure conditions as well as on ageing of the treated fabrics.

Emulsions of Magnasoft STE textile enhancer have exhibited outstanding shear stability and low fabric yellowing at extremes of pH and temperature in tests conducted in our laboratories. As a result, Magnasoft STE textile enhancer may be applied onto fabrics using all types of finishing equipment including high speed padding, kiss roll, spray, exhaustion, foam finishing, etc.

Magnasoft STE textile enhancer is part of the Momentive portfolio of textile enhancers, which includes well-known grades as Magnasoft SRS textile softener, Magnasoft JSS tissue softener, Magnasoft DerMa NT textile enhancer and Magnasoft 238 textile enhancer.

Performance Data

Magnasoft STE textile enhancer can be particularly effective on cotton knits and woven fabrics where it provides silky, drape-able and natural cotton-like hand feel as well as quick water/perspiration absorption in addition to typical silicone softener effects.

Magnasoft STE textile enhancer needs to be applied as a water emulsion. Because of its polar nature, the emulsification of Magnasoft STE textile enhancer is much easier and simpler than conventional amino modified silicone fluids. It is easily emulsified using simple mixing devices and containers widely available throughout the industry. There is no need for homogenization or colloid milling to emulsify Magnasoft STE textile enhancer.

Table 1, on page 3, shows a typical guide formulation and procedure to prepare an emulsion of Magnasoft STE textile enhancer. If the emulsions are intended to be stored for extended periods, it is recommended that a biocide be added to retain sterility.

Emulsions of Magnasoft STE textile enhancer possess extraordinary shear stability in a wide pH range (3~12), at high temperatures and in the presence of electrolytes in tests conducted in our laboratories. Therefore, Magnasoft STE textile enhancer may be applied under very demanding conditions and processes such as high speed continuous pad-bath finishing, foam and spraying finishing that are typically designed for mass textile finishing resulting in considerable costs savings to the textile mills.

Optimum dose levels of Magnasoft STE textile enhancer are subject to the type of fabric and level of softness required, but 20~40 g/l (for 0.2~0.4% silicone pick-up) of 10% silicone actives emulsion are typically recommended. **Since softness and hand-feel of Magnasoft STE textile enhancer are maximized if applied at pH7 of the finish bath, keeping the finish bath close to pH neutral, i.e., at pH6~8, is strongly recommended.**

Magnasoft STE textile enhancer may be combined, blended or formulated with a broad range of cationic and/or non-ionic textile auxiliaries as well as other silicone materials, so as to differentiate the performance. Typically, these may include organic quats, amphoterics (betaines) or imidazolines, alkylolamine esters, fatty acid amides, ethoxylated/propoxylated surfactants, polyethylene wax emulsions, starches, other water soluble or emulsifiable polymers, amino silicones, amino/polyether silicones or other silicone emulsions. Such formulations may be developed for use in specific applications such as textile finishing, spin finishes, thread lubrication etc. Magnasoft STE textile enhancer is medium in viscosity that can be easily transferred from its original package if using piston pumps.

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Performance Data (cont'd)

Table 1: Guide Formulations for Micro-emulsion of Magnasoft STE textile enhancer

Ingredients	10% Silicone Actives [weight %]	20% Silicone Actives [weight %]	Notes
Magnasoft STE textile enhancer	10.0	20.0	
Tridecyl Alcohol 6EO Ethoxylate	2.3	2.0	Emulsifier
Tridecyl Alcohol 12EO Ethoxylate	1.7	6.0	Emulsifier
Butyl Carbitol	1.0	4.0	Co-emulsifier
Acetic Acid	0.3	0.6	
Water	84.7	67.4	

Procedure

1. Charge Magnasoft STE textile enhancer, emulsifiers, and butyl carbitol. Mix at 800~1,000 rpm for 20 minutes or until fully homogeneous.
2. Slowly charge 50% of water while stirring.
3. Homogeneously dilute acetic acid with the remaining 50% of water, and then slowly charge the acidified water.
4. Reduce mixing speed to 400~500 rpm and continue to stir for 20 minutes.
5. Filter into the containers.



**Appearance of
10% actives
Magnasoft STE
textile enhancer
emulsion**



**Appearance of
20% actives
Magnasoft STE
textile enhancer
emulsion**

Product formulations are included as illustrative examples only. Momentive makes no representation or warranty of any kind with respect to such formulations, including, without limitation, concerning the efficacy or safety of any product manufactured using such formulations.

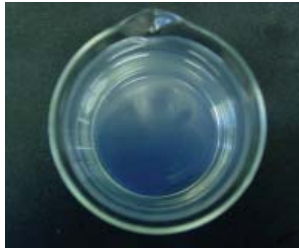
Note: Test results. Actual results may vary.

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Performance Data (cont'd)

Shear Stability

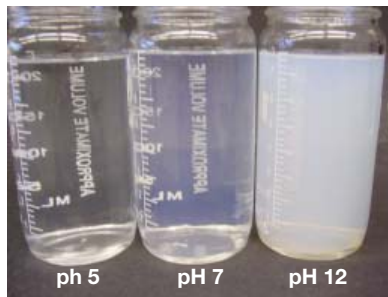


Appearance after shearing
100g/l of 10% actives
Magnasoft STE textile enhancer
emulsion in homomixer at
2,000 rpm, 80°C and pH12.

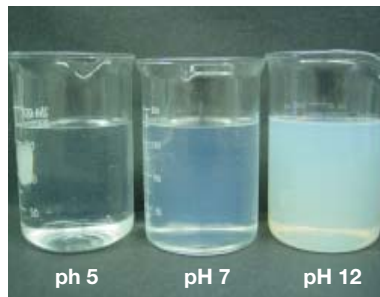
Observation Results:
No separation, silicone oil droplets or silicone residue were observed.

Alkaline Stability at Boiling

Bath pH	Emulsion of Magnasoft STE textile enhancer	Amino microemulsion	Benchmark I	Benchmark II
5	Clear & Stable	Unstable, silicone oil droplets	Clear & Stable	Clear & Stable
7	Clear & Stable	Unstable, silicone oil droplets	Clear & Stable	Clear & Stable
12	Clear & Stable	Unstable, many silicone oil droplets	Unstable, silicone oil droplets	Unstable, many silicone oil droplets



1% active Magnasoft STE textile enhancer (Before boiling)



1% active Magnasoft STE textile enhancer (After boiling)



1% active Amino (After boiling)

Observation Results:

- No silicone oil droplets or silicone residue were observed in Magnasoft STE textile enhancer. The emulsion had a clear appearance after boiling.
- Complete emulsion separation with a sticky silicone gel layer was observed with the amino microemulsion.

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Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Product Safety, Handling and Storage

Customers should review the latest Material Safety Data Sheet (MSDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, and any special storage conditions required for safety. MSDS are available at www.momentive.com or, upon request, from any Momentive Performance Materials (MPM) representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

MAGNASOFT* STE textile enhancer

Emergency Service

Momentive Performance Materials maintains an around-the-clock emergency service for its products.

<u>Location</u>	<u>Emergency Service Provider</u>	<u>Emergency Contact Number</u>
Mainland U.S., Puerto Rico	CHEMTREC	1-800-424-9300
Alaska, Hawaii	CHEMTREC	1-800-424-9300
Canada	CHEMTREC	1-800-424-9300
Europe, Israel	NCEC	+44 (0) 1235239670
Middle East	NCEC	+44 (0) 1235239671
Asia Pacific (except China)	NCEC	+44 (0) 1235239670
China	NCEC	+86-10-5100-3039
Latin America (except Brazil)	NCEC	+44 (0) 1235239670
Brazil	SOS Cotec	08000111767 or 08007071767
All other locations world wide	NCEC	+44 (0) 1235239670
At sea	Radio U.S. Coast Guard in U.S. waters NCEC in International waters	+44 (0) 1235239670

For Health related calls, contact Momentive Performance Materials at +1-518-233-2500 (English only).

DO NOT WAIT. Phone if in doubt. You will be referred to a specialist for advice.



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