

Magnasoft* OPS textile softener



MARKETING BULLETIN

SPECIALTY FLUIDS - TEXTILES & LEATHER

Magnasoft OPS textile softener is a specialty silicone emulsion that has been shown to provide multiple performance benefits on virtually all types of fabric. It is an excellent candidate to consider for an optimum balance of in-depth softness with dry/cool feel, fabric drapeability, hydrophilicity for absorbency fabric and bath stability in textile finishing processes.

Magnasoft OPS textile softener has been tested and shown to deliver a differentiated feel compared to fabrics treated with conventional amino-functional silicones. In contrast with the conventional amino functional silicone softeners, Magnasoft OPS textile softener provided a more comfortable feel, with skin-like touch, in addition to being virtually non-yellowing on fabrics and minimizing processing difficulties in a variety of textile finishing conditions.

Magnasoft OPS textile softener is a water-based emulsion that is manufactured without the use of alkylphenol ethoxylates (APEO) and therefore it is readily applicable for use in virtually any conventional finishing and/or printing processes in textile dyeing and finishing mills.

Key Features and Typical Benefits

- Full softness, slickness and resilience
- A "dry and cool-touch" for cotton and cotton blended fabrics; non-greasy and natural touch noticeably distinguishable from that of conventional amino-functional silicones
- Improved fabric drapeability and wrinkle resistance
- Minimal impact on the hydrophilic nature of cotton and other cellulose fabrics
- Shear stability, even in alkaline and high temperature bath conditions
- Highly resistant to yellowing on white fabrics and to discoloration on colored fabrics
- Versatile compatibility with typical bath conditions for textile finishing
- Water dispersible; ready-to-use in textile finishing processes
- Widely applicable for most available methods and equipment for textile finishing

Typical Physical Properties

Property	Unit	Current
Appearance	-	Transparent to translucent liquid
Viscosity at 25 °C	cPs	150
pH at 25 °C	-	6.5
Emulsion	-	Nonionic
Density g/ml		1.0

Typical properties are average data and are not to be used as or to develop specifications.

Potential Applications

Magnasoft OPS textile softener is an excellent candidate to consider for a wide range of advantages on virtually all types of fabric.

It has been shown to be particularly effective on cotton knits, cotton sheets, cotton/spandex blends, polyester knits, polyester/cotton blends and other cellulose fabrics where it helped provide an optimally balanced hand of softness, slickness and smoothness with dry and cool feel, as well as a reasonable level of hydrophilicity for absorbency.

In tests, Magnasoft OPS textile softener generally possessed excellent shear stability over a wide bath pH range (4-10), at high bath temperature (up to 60 °C) in the presence of salts. These test results indicated that Magnasoft OPS textile softener may be considered for use in most textile finishing methods including padding, exhaustion and spray.

Optimal dosage levels of Magnasoft OPS textile softener depend on the type of fabric level of softness required, but 10-50 g is recommended as a typical starting point.

Performance Data

Table 1: Softness by Hand-Panel Rating

Fabric: Cotton/Spandex Jersey	Hand-Panel Rating					Test Conditions
	Panelist A	Panelist B	Panelist C	Panelist D	Average	
Magnasoft OPS textile softener	4.5	4.5	4.0	4.5	4.4	Dosage for cost-performance at same cost
Amino silicone micro-emulsion	3.75	4.0	3.75	4.0	3.9	
Benchmark A	3.5	3.75	3.75	3.75	3.7	Padding → Dry at 150 °C x 2 min
Benchmark B	4.0	4.25	4.0	4.25	4.1	Rating softness by hand panel (5-best, 2-worst)
Untreated	2.0	2.0	2.0	2.0	2.0	

Fabric: Cotton/Single Jersey	Hand-Panel Rating					Test Conditions
	Panelist A	Panelist B	Panelist C	Panelist D	Average	
Magnasoft OPS textile softener	4.5	4.5	4.5	4.25	4.4	Dosage for cost-performance at same cost
Amino silicone micro-emulsion	4.25	4.0	4.0	4.5	4.2	
Benchmark A	3.75	3.5	3.75	3.75	3.7	Padding → Dry at 130 °C x 2.5 min Cure at 160 °C x 1 min
Benchmark B	4.0	3.75	4.25	4.0	4.0	Rating softness by hand panel (5-best, 2-worst)
Untreated	2.0	2.0	2.0	2.0	2.0	

Note: Test data. Actual results may vary.

Panelist's Comments: The hand of the amino silicone micro-emulsion is slippery and greasy while Magnasoft OPS textile softener provided an excellent, silky touch with a dry/cool feel that was attractive.

Table 2: Hydrophilicity by AATCC Test Method 79-1995

Fabric: Cotton/Spandex Jersey	Wettability using Water (seconds)	Test Conditions
Magnasoft OPS textile softener	9.4	Dosage for cost-performance at same cost
Amino silicone micro-emulsion	28.5	
Benchmark A	5.3	Padding → Dry at 150 °C x 2 min
Benchmark B	49.5	Hydrophilicity measured by water drop (AATCC 79-1995)
Untreated	<1	

Note: Test data. Actual results may vary.

Table 3: Fabric Whiteness

Fabric: Cotton/Single Jersey	Whiteness Index		Test Conditions
	130 °C x 2.5 min only	130 °C x 2.5 min → 160 °C x 1 min	
Magnasoft OPS textile softener	71.52	71.03	Padding → Dry at 130 °C x 2.5 min
Amino silicone micro-emulsion	69.9	69.4	
Benchmark A	72.46	71.34	Padding → Dry at 130 °C x 2.5 min → Cure at 160 °C x 1 min
Benchmark B	71.2	71.0	
Untreated (water only)	71.49	70.9	Measuring the fabric whiteness: The higher index number, the whiter the fabric

Note: Test data. Actual results may vary.

Table 4: Shear Stability under Alkaline Bath Conditions

Product	Oil Droplet Observed		Test Conditions
	Bath pH 8.5	Bath pH 10	
Magnasoft OPS textile softener	None	None	Adjusted bath pH with 10% caustic soda solution
Amino silicone micro-emulsion	Seriously	Seriously	Dosed 50g/l of each softener in the alkaline bath
Benchmark A	None	None	Sheared at 1,500 rpm at room temperature for 60 min
Benchmark B	Much	Much	Observed oil droplet on bath surface and in the bath

Note: Test data. Actual results may vary.

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.

Limitations

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

Product Safety, Handling and Storage

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at www.momentive.com or, upon request, from any 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.

Customer Service Centers

Worldwide

Email: commercial.services@momentive.com

Americas+1 800 295 2392
+1 614 986 2495**Europe, Middle East,
Africa and India**00800 4321 1000
+40 213 044229**Asia Pacific****China**
800 820 0202
+86 21 3860 4892**All Other Countries**
+60 3 9206 1543**Japan**0120 975 400
+81 276 20 6182

Disclaimer

FORMULATIONS ARE ILLUSTRATIVE EXAMPLES AND DO NOT REPRESENT COMMERCIALIZED PRODUCTS. They have not been subjected to extensive testing and Momentive makes no representation or warranty of any kind with regard to any such formulations, including, without limitation, concerning the performance, efficacy or safety of any product manufactured using such formulations. EACH USER BEARS FULL RESPONSIBILITY FOR (1) MAKING ITS OWN DETERMINATION AS TO THE SUITABILITY AND LEGAL COMPLIANCE OF ANY FORMULATION, MATERIALS, RECOMMENDATIONS, OR ADVICE FOR ITS OWN PARTICULAR USE, (2) IDENTIFYING AND PERFORMING ALL TESTS AND ANALYSES NECESSARY TO ASSURE THAT ITS FINISHED PRODUCTS BASED UPON EXAMPLE FORMULATIONS AND/OR INCORPORATING MENTIONED PRODUCTS, MATERIALS, OR SERVICES WILL BE SAFE AND SUITABLE FOR USE UNDER END-USE CONDITIONS, AND (3) OBTAINING ANY NECESSARY GOVERNMENT OR REGULATORY CLEARANCE, LICENSE OR REGISTRATION.

Any reference to a third party's materials is not an endorsement of those materials or an endorsement by the third party of Momentive materials. Momentive has not undertaken a comprehensive patent or other intellectual property search on the formulations. No statement contained herein concerning a possible or suggested use of any material, product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right covering such use or design, or as a recommendation for the use of such material, product, service or design in the infringement of any patent or other intellectual property right.

BEFORE HANDLING ANY PRODUCTS MENTIONED, REVIEW THE LATEST SAFETY DATA SHEET (SDS) AND LABEL FOR PRODUCT SAFETY INFORMATION, SAFE HANDLING INSTRUCTIONS, PERSONAL PROTECTIVE EQUIPMENT IF NECESSARY, EMERGENCY SERVICE CONTACT INFORMATION, AND ANY SPECIAL STORAGE CONDITIONS REQUIRED FOR SAFETY. MOMENTIVE MAINTAINS AN AROUND-THE-CLOCK EMERGENCY SERVICE FOR ITS PRODUCTS. SDS FOR MOMENTIVE PRODUCTS ARE AVAILABLE AT WWW.MOMENTIVE.COM OR, UPON REQUEST, FROM ANY MOMENTIVE REPRESENTATIVE. USE OF OTHER MATERIALS IN CONJUNCTION WITH MOMENTIVE PRODUCTS MAY REQUIRE ADDITIONAL PRECAUTIONS. PLEASE REVIEW AND FOLLOW THE SAFETY INFORMATION PROVIDED BY THE MANUFACTURER OF SUCH OTHER MATERIALS.

THE MATERIALS, PRODUCTS AND SERVICES OF MOMENTIVE PERFORMANCE MATERIALS INC. AND ITS SUBSIDIARIES AND AFFILIATES (COLLECTIVELY "SUPPLIER"), ARE SOLD SUBJECT TO SUPPLIER'S STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST, EXCEPT AS PROVIDED IN SUPPLIER'S STANDARD CONDITIONS OF SALE. SUPPLIER AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of Supplier's standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by Supplier.