

Magnasoft™ TLC Hydrophilic Softener

Magnasoft* TLC

Description

Magnasoft TLC softener is a watersoluble organomodified silicone fluid designed to impart softness and hydrophilicity to a variety of woven and nonwoven fabrics.

Substrates to which Magnasoft TLC softener has been successfully applied are 100% synthetics, such as polyester, polypropylene, and polyethylene, as well as a variety of polyester/cotton blends.

Magnasoft TLC softener is nonionic in nature and, therefore, compatible with a broad range of other formulating components with which it might be used. In addition, Magnasoft TLC softener increases the tear strength and flex abrasion properties of certain fabrics.

Magnasoft TLC softener markedly improves the hydrophilicity of hydrophobic substrates and does not interfere with the wettability of hydrophilic substrates. With only limited durability, Magnasoft TLC softener is suggested primarily for single-use or limited-life products.

Key Features and Benefits

- Water-soluble
- Excellent hydrophilicity
- Imparts good softening properties
- Improves fabric strength
- Shear-stable
- Excellent compatibility with other formulating components

- Economical

Typical Physical Properties

Appearance	Clear Liquid
Percent Actives	100
Ionic Nature	Nonionic
Nominal Viscosity, cSt	425
Cloud Point, 1% solution, °C (°F)	48 (118)
Solvents	Water, Alcohol

Processing Recommendations

100% Polyester Nonwoven [(1.3 oz/yd²)(44 g/m²)]

Pad Bath Formulation	Weight Percent	
	Magnasoft TLC softener	Water
Magnasoft TLC Softener	0.65	—
Water, distilled	99.35	100.0
Solids Pick-up, %	0.9	0.0
Dry/Cure Cycle at 340°F (170°C), min	1.5	1.5
Performance		
Softness ⁽¹⁾	1.0	5.0
Wettability ⁽²⁾ , sec	3.0	>300
Elmendorf Tear ⁽³⁾ , g	1020	635

(1) 1 = Softest, 5 = Harshesht

(2) AATCC 79-1980

(3) ASTM D1424-83

Polyester/Cotton = 65/35 Woven Broadcloth [(3.0 oz/yd²) (102 g/m²)]

Pad Bath Formulation	Weight Percent	
	Magnasoft TLC softener	Water
Dp Resin (38%)	15.00	15.00
Resin Catalyst (64%)	2.25	2.25
Magnasoft TLC Softener	1.18	—
Water, distilled	81.57	82.75
Silicone Solids Pick-up, %	1.0	0.0
Dry/Cure Cycle at 340°F (170°C), min	1.5	1.5
Performance		
Softness ⁽¹⁾	1.0	5.0
Wettability ⁽²⁾ , sec	5.0	6.0

(1) 1 = Softest, 5 = Harshesht

(2) AATCC 79-1980

100% Polypropylene Nonwoven [(0.7 oz/yd²) (24 g/m²)]

Pad Bath Formulation	Weight Percent	
	Magnasoft TLC softener	Water
Magnasoft TLC Softener	0.33	—
Water, distilled	99.67	100.0
Silicone Solids Pick-up, %	0.6	0.0
Dry/Cure Cycle at 245°F (118°C), min	1	1
Performance		
Softness ⁽¹⁾	1.0	5.0
Wettability ⁽²⁾ , sec	<1	>300

(1) 1 = Softest, 5 = Harshesht

(2) AATCC 79-1980

100% Fused Polyester Nonwoven [(0.5 oz/yd²) (17 g/m²)]

Pad Bath Formulation	Weight Percent	
	Magnasoft TLC softener	Water
Magnasoft TLC Softener	0.5	—
Water, distilled	99.5	100.0
Silicone Solids Pick-up, %	0.9	0.0
Dry/Cure Cycle at 340°F (170°C), min	1.5	1.5
Performance		
Softness ⁽¹⁾	1.0	5.0
Wettability ⁽²⁾ , sec	Immediate Strike Through	>300
Elmendorf Tear ⁽³⁾ , g	1710	1040

(1) 1 = Softest, 5 = Harshesht

(2) AATCC 79-1980

(3) ASTM D1424-83

100% Polyester Woven Fabric, Heat Set [(3.7 oz/yd²) (125 g/m²)]

Pad Bath Formulation	Weight Percent	
	Magnasoft TLC softener	Water
Magnasoft TLC Softener	1.18	—
Water, distilled	98.82	100.0
Silicone Solids Pick-up, %	1.0	0.0
Dry/Cure Cycle at 340°F (170°C), min	1.5	1.5
Performance		
Softness ⁽¹⁾	1.0	5.0
Wettability ⁽²⁾ , sec	5.0	>300
Elmendorf Tear ⁽³⁾ , g		
Warp	8000	6700
Fill	5000	4200

(1) 1 = Softest, 5 = Harshesht

(2) AATCC 7H9-1980

(3) ASTM D1424-83

Kawabata Softness Evaluations

Softness may also be evaluated with Kawabata instrumentation and correlated to hand panel evaluations. The Kawabata Evaluation System (KES) is designed to measure the low deformation forces encountered when manipulating fabric for softness. The result of Kawabata evaluations on polypropylene nonwoven [(0.75 oz/yd²) (25.5 g/m²)] treated with 0.3 percent Magnasoft TLC add-on are listed in Table 1.

Table 1: Evaluation of Low Deformation Forces by Kawabata Instrumentation for 100% Polypropylene Nonwoven [(0.75 oz/yd²) (25.5 g/m²)]

Finish	Force		
	G	RC	RT
Untreated	7.6	62.1	54.6
Magnasoft TLC Softener	6.2	61.9	56.5

Where:

G = Shear rigidity (the larger the value, the more difficult to shear), g/cm•degree

RC = Compressional resilience (the larger the value, the better the recovery), %

RT = Tensile resilience (the larger the value, the better the recovery properties), %

Table 2 illustrates the correlation between Kawabata calculated data and hand panel evaluations for treated and untreated polypropylene substrates. The softness values are calculated according to the expression:

$$\text{Softness} = -194.3 + 11.5 (\ln [G]) + 2.8(RC) + 0.12(RT) \pm 0.46$$

Table 2: Comparison of Kawabata and Hand Panel Softness Values⁽¹⁾ for 100% Polypropylene Nonwoven [(0.75 oz/yd²) (25.5 g/m²)]

Finish	Hand Panel	Kawabata
Untreated	10.0	9.6
Magnasoft TLC Softener	6.5	6.8

(1) 1 = Softest, 10 = Harshesht, 5 = Epoxy silicone standard

As the data show, the calculated values from the Kawabata evaluation are in good agreement with those obtained through a hand panel.

Patent Status

Standard copy to come

Product Safety, Handling and Storage

Standard copy to come

Limitations

Standard copy to come

Contact Information

Email

commercial.services@momentive.com

Telephone

Americas	Latin America	EMEAI- Europe, Middle East, Africa & India	ASIA PACIFIC
+1 800 295 2392	Brazil	Europe	China
Toll free*	+55 11 4534 9650	+390510924300	800 820 0202
+704 805 6946	Direct Number	Direct number	Toll free
Direct Number			+86 21 3860 4892
			Direct number
*All American countries	Mexico	India, Middle East & Africa	Japan
	+52 55 2169 7670	+ 91 44 71212207	+81 3 5544 3111
	Direct Number	Direct number*	Direct number
		*All Middle Eastern countries, Africa, India,	Korea
			+82 2 6201 4600

For literature and technical assistance, visit our website at: www.momentive.com

DISCLAIMER:

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. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SUPPLIER MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (i) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING ITS PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE. 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. Each user bears full responsibility for making its own determination as to the suitability of Supplier’s materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating Supplier’s products, materials, or services will be safe and suitable for use under end-use conditions. 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. 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 of Supplier 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.

* Magnasoft™は Momentive Performance Materials Inc. の商標です。

The use of the “™” symbol designates registered or unregistered trademarks of Momentive Performance Materials Inc. or its affiliated companies. Momentive and the Momentive logo are trademarks of Momentive Performance Materials Inc.