

Magnasoft™ JSS Hydrophilic Textile Enhancer

Magnasoft* JSS

Description

Magnasoft JSS hydrophilic textile enhancer is a new product that possesses outstanding stability under alkaline conditions and at the high temperatures under which conventional aminosilicone emulsions separate and cause silicone spots. At lower levels than other products, Magnasoft JSS hydrophilic textile enhancer delivers a soft, silky, full hand feel and a hydrophilic property to various fabrics.

Magnasoft JSS hydrophilic textile enhancer can be applied to a variety of fabrics to deliver outstanding softness with very little yellowing, compared to conventional amino silicones.

Dilutions of Magnasoft JSS hydrophilic textile enhancer are extremely shear stable, even at the highly alkaline pH of 14 and at the high temperature of 100°C. Furthermore, its dilutions remain stable in conditions that are often encountered in dyehouses (high temperature baths).

Key Features and Benefits

- Standard hydrophilic finish
- Silicone softness with virtually no yellowing
- For all types of cotton and synthetic fabrics
- A semi-durable, hydrophilic performance
- Excellent pH and shear stability
- Easy-to-handle liquid that is dilutable in water with minimal stirring
- Compatibility with most finishing additives
- Compatibility with soil release fluorocarbon finishes

- Can be readily stripped off of fabric

Typical Physical Properties

Appearance	Clear straw fluid
Viscosity (at 25°C, cPs)	5000
Amine Content, %	0.57
pH (1% at 25°C)	9
Solids Content, %	83

Potential Applications

Magnasoft JSS hydrophilic textile enhancer is a premium enhancer for all types of fabrics: cotton, synthetics and cotton/synthetic blends. Magnasoft JSS hydrophilic textile enhancer can be used effectively on wrinkle-free garments that are treated with DP resin and fluorocarbon soil release finishes.

Magnasoft JSS hydrophilic textile enhancer is normally applied as a water dilution, blended into the treatment bath formulation. The water dilutions of Magnasoft JSS hydrophilic textile enhancer have excellent shear stability at high alkaline conditions and high temperatures. Therefore, it is an excellent material of choice and can be used for applications where normal emulsified softeners do not show adequate shear stability. Magnasoft JSS hydrophilic textile enhancer and its dilutions are very stable over a wide pH environment (3–14 pH). Alternative products that require standard emulsifications may not tolerate these same pH extremes.

How to Apply

Magnasoft JSS hydrophilic textile enhancer can be used as received or prediluted simply with water before applying. The optimum treatment will depend on the required softness of the fabric or yarn after dyeing and rinsing. In order to obtain the optimum performance of Magnasoft JSS hydrophilic textile enhancer, it is strongly recommended that the bath be acidified to pH 4-5 with acetic acid as shown in the examples below.

1. Pad-Dry-Cure Process

Dosage	3–5 g/l (light fabric) — 4–6 g/l (heavy fabric)
pH	4-5 (adjusted with acetic acid)
Temperature	20-40°C
Pick-Up	65-100%
Drying	100-130°C for 1-2 minutes
Curing	150-180°C for 1-3 minutes

2. Exhaustion Process

Dosage	0.3–1.0% on the weight of fabric
Liquor Ratio	1/10–1/20
pH 4–5	(adjusted with acetic acid)
Temperature	30–50°C
Time	20–30 minutes
Drying	100–130°C

3. Garment Washing Process

Dosage	0.3–1.0% on the weight of garment
Conditions Same	as exhaustion process

Dilution Preparation

Magnasoft JSS hydrophilic textile enhancer can be used as received or diluted to any active level. The preferred range is 5.0 to 30.0% Magnasoft JSS hydrophilic textile enhancer according to the following procedures:

Processing Recommendations

Formulations	#1	#2	#3	#4
Magnasoft JSS hydrophilic textile enhancer (%)	5	10	20	30
Alcohol Ethoxylated–15E0	–	~0.3	~1.0	~1.0
Biocide (%)	(a)	(a)	(a)	(a)
Water	to 100%	to 100%	to 100%	to 100%

1. Charge water and surfactant into mixing vessel, stir at 400 rpm until surfactant is completely dissolved.
2. Add Magnasoft JSS hydrophilic textile enhancer slowly under stirring and continue to stir for 5 minutes.
3. Add biocide^(a) if needed. Mix for an additional 10 minutes.
4. Filter to a container.

(a) Biocides must be used in accordance with FIFRA regulations and manufacturer’s label directions.

The softness rating discussed in these and subsequent charts is based on a scale of 1 to 8, where 8 is the softest. The wettability (or hydrophilic) rating is measured in seconds. The whiteness rating compares the percent reflectance after treatment with our textile softener to the percent reflectance of a white standard, or

Table 1: Magnasoft JSS Hydrophilic Textile Enhancer vs. Competitive Softener at Various Add-On Levels on Cotton Knit Fabric

Magnasoft JSS Hydrophilic Textile Enhancer	Softness Rating	Softness Rating	Competitive Product
0.3% ----->	5.7	5.6 <-----	0.5%
0.5% ----->	6.5	6.0 <-----	1.0%
1.0% ----->	7.0	7.0 <-----	2.0%

Table 2: Magnasoft JSS Hydrophilic Textile Enhancer vs. Other Hydrophilic Softeners (1% BOWF)

Hydrophilic Softner	Softness Rating	Wettability (sec.) (AATCC Test Protocol 79-1995)	Whiteness ((AATCC Test Method 110-1995)
Magnasoft JSS hydrophilic textile enhancer	7.5	5-8	75-85
Magnasoft HSSD hydrophilic textile softener	4.5	0-1	70
Control	1	0-1	81

The data presented in the tables below demonstrate excellent softness, good wettability, and little or no yellowing of various fabrics treated with Magnasoft JSS hydrophilic textile enhancer.

Table 3: Magnasoft JSS Hydrophilic Textile Enhancer Performance on 100% Cotton Terry cloth

Add-on (% BOWF)	Softness Rating	Wettability (sec.) (AATCC Test Protocol 79-1995)	Whiteness (AATCC Test Method 110-1995)
0.3	5.7	33	76.7
0.5	6.0	20	77.5
0.7	6.4	15	80.0
1.0	6.5	13	80.1
Control	1	<0.2	80.9

Table 4: Magnasoft JSS Hydrophilic Textile Enhancer Performance on 100% Cotton Knits

Add-on (% BOWF)	Softness Rating	Wettability (sec.) (AATCC Test Protocol 79-1995)	Whiteness (AATCC Test Method 110-1995)
0.3	6.1	28	67.8
0.5	6.4	35	68.4
0.7	6.5	19	68.4
1.0	6.8	20	67.4
Control	1.8	1	72

Table 5: Magnasoft JSS Hydrophilic Textile Enhancer Performance on 100% Cotton Print Cloth

Add-on (% BOWF)	Softness Rating	Wettability (sec.) (AATCC Test Protocol 79-1995)	Whiteness (AATCC Test Method 110-1995)
0.3	4.8	8	86.1
0.5	5.3	8	86.3
0.7	5.8	5	85.1
1.0	6.3	4	85.3
Control	1	<0.2	86

Table 6: Magnasoft JSS Hydrophilic Textile Enhancer Performance on 100% Cotton Twill Cloth

Add-on (% BOWF)	Softness Rating	Wettability (sec.) (AATCC Test Protocol 79-1995)	Whiteness (AATCC Test Method 110-1995)
0.3	5.6	13	73.8
0.5	6.0	13	73.0
0.7	6.2	14	72.9
1.0	6.5	12	72.5
Control	1	<0.2	74.2

Table 7: Magnasoft JSS Hydrophilic Textile Enhancer Performance on 63/35 Polyester/Cotton Print Cloth

Add-on (% BOWF)	Softness Rating	Wettability (sec.) (AATCC Test Protocol 79-1995)	Whiteness (AATCC Test Method 110-1995)
0.3	6.3	32	91.4
0.5	6.5	10	91.7
0.7	6.6	6	91.9
1.0	7.0	5	92.0
Control	2	41	88.2

Stripping

Formulation for cotton fabric

- 2–5 g/1 NaOH
- 2–3 g/1 SDBS (Sodium Dodecyl Benzene Sulfonate, 30%)
- Water

Formulation for polyester fabric

- 2–5 g/1 Na₂CO₃
- 2–3 g/1 AE–15 (Alcohol ethoxylated–15 EO)

Procedure for stripping off

- Charge fabric and water into machine
- Add NaOH and SDBS for cotton fabric or Na₂CO₃ and AE–15 for polyester fabric
- Heat to 100°C and continue to boil for 60 minutes
- Cool down to about 60°C and neutralize with acetic acid to pH 5–6
- Rinse fabric with water

Comparison between Stripping Magnasoft JSS Hydrophilic Textile Enhancer and Conventional Aminosilicone

Conditions	Fabric Treatment	Oil Spots	Wetting Time (sec.) after Stripping
NaOH: 2 g/l SDBS: 2 g/l Boiling at 100°C for 60 minutes	Cotton Woven with Magnasoft JSS hydrophilic textile enhancer	No	~2
	Cotton Woven with conventional aminosilicone	Yes	>180
	Untreated Cotton Woven	No	~2
	Cotton Knit with Magnasoft JSS hydrophilic textile enhancer	No	11.5
	Cotton Knit with Conventional aminosilicone	Yes	&>180
	Untreated Cotton Knit	No	1.5

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™는 Momentive Performance Materials Inc.의 상표입니다.

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.