

MAGNASOFT* MT90 textile enhancer

SPECIALTY FLUIDS - TEXTILES & LEATHER



Magnasoft MT90 textile enhancer is a textile auxiliary agent that typically delivers a hydrophilic, voluminous, silky hand to fabrics at lower use levels than other products and, very significantly, helps retain these performance attributes through several home laundry cycles.

Magnasoft MT90 textile enhancer is a patented, quat functional silicone copolymer with a repeating block structure that combines several chemical entities in one linear molecule. Close to self-emulsifiable, Magnasoft MT90 textile enhancer typically can be applied by spray but is a particularly good candidate to consider for exhaust applications based on its outstanding emulsion stability.

Key Features and Typical Benefits

- Combines a silky feel and a rich, bulky hand to help impart a remarkable softness to fabrics
- Typically does not alter the hydrophilic nature of cotton and cotton blends and increases the hydrophilicity of synthetics
- Can provide stretch recovery with a significant elastomeric effect, particularly on knits
- Helps impart in-depth softness
- Can be effective on virtually all types of fibers
- Can provide softness and durability effects that are fast to a minimum of ten home laundry washes; this is particularly pronounced with cellulosic fibers
- Nearly self-emulsifiable; can generate emulsions that possess extreme shear and pH stability (acid and alkaline)
- Causes virtually no yellowing of white or light shaded fabrics
- Not known to affect the color of dark fabrics
- No unpleasant odor

Typical Physical Properties

Appearance	Pale yellow liquid
Viscosity, cPs, 25 °C/77 °F	15,000
Density, g/cm ³	0.980

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

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Potential Applications

Magnasoft MT90 textile enhancer is a textile auxiliary agent that may add significant value to knit and woven fabrics. Magnasoft MT90 textile enhancer is typically effective on knits where it provides typical silicone softener effects and also increases stretch recovery. This textile enhancer is generally effective on woven fabrics and is compatible with durable press resin and fluorocarbon soil-release finishes.

General Instructions for Use

Magnasoft MT90 textile enhancer is normally applied as a water emulsion. Due to its polar nature, Magnasoft MT90 textile enhancer can be easily emulsified using simple mixing devices and containers widely available throughout the industry. There is no need for homogenization or colloid milling.

Emulsions of Magnasoft MT90 textile enhancer typically possess extraordinary shear stability in a wide pH range (3-12) at temperatures up to boiling and in the presence of high concentrations of salts. Tests carried out in a jet dyer (liquor to goods ratio 1:10, 40 °C /104 °F, pH 4-5, 20 minutes, pump level 6) demonstrated excellent emulsion stability. As a result, Magnasoft MT90 textile enhancer is an excellent candidate to consider for use under very demanding conditions (jet finishing, EVAC, etc.).

Performance Data

The data presented in Table 2 demonstrate excellent softness, good wettability and no yellowing for various fabrics treated with Magnasoft MT90 textile enhancer. The various products listed in these tables were emulsified to a 20% actives emulsion and used at either 15 g/L (for the 0.25% silicone pick up) or at 30 g/L (for the 0.5% silicone pick up).

Table 2. Performance of Magnasoft MT90 Textile Enhancer

	Add-on (% BOWF)	Softness Rating ⁽¹⁾	Wicking Height (mm) ⁽²⁾	Wettability (seconds) ⁽³⁾	Whiteness ⁽⁴⁾
100% cotton terrycloth					
Magnasoft MT90 textile enhancer	0.25	6.1	52	4	77
Magnasoft MT90 textile enhancer	0.5	6.5	49	5	76
Magnasoft HSSD textile softener	0.25	4.2	55	Instant	78
Magnasoft Prime* AP textile softener	0.25	6.0	50	9	77
Untreated	-	1.0	39	3	79
100% cotton knit					
Magnasoft MT90 textile enhancer	0.25	6.5	70	12	64
Magnasoft MT90 textile enhancer	0.5	6.4	69	10	63
Magnasoft HSSD textile softener	0.25	4.3	79	Instant	65
Magnasoft Prime AP textile softener	0.25	6.4	66	8	63
Untreated	-	1.3	60	5	66
65/35 polyester/cotton					
Magnasoft MT90 textile enhancer	0.25	6.2	48	20	70
Magnasoft MT90 textile enhancer	0.5	6.2	49	18	70
Magnasoft HSSD textile softener	0.25	4.3	56	2	71
Magnasoft Prime AP textile softener	0.25	6.0	55	20	72
Untreated	-	1.0	53	8	72
100% polyester					
Magnasoft MT90 textile enhancer	0.25	6.2	48	20	70
Magnasoft MT90 textile enhancer	0.5	6.2	49	18	70
Magnasoft HSSD textile softener	0.25	4.3	56	2	71
Magnasoft Prime AP textile softener	0.25	6.0	55	20	72
Untreated	-	1.0	53	8	72
100% nylon					
Magnasoft MT90 textile enhancer	0.25	5.1	70	11	65
Magnasoft MT90 textile enhancer	0.5	5.9	65	9	68
Magnasoft HSSD textile softener	0.25	4.3	59	1	61
Magnasoft Prime AP textile softener	0.25	5.9	67	5	66
Untreated	-	1.0	33	>300	64

(1) The softness rating is based on a scale of 1 to 8, with 8 being the softest.

(2) The wicking height is measured in mm.

(3) (AATCC Test Protocol 70-1995) The wettability (or hydrophilic) rating is measured in seconds.

(4) (AATCC Test Method 110-1995) The whiteness rating compares the percent reflectance after treatment to the percent reflectance of white standard, or control.

The higher the number, the whiter the fabric.

Note: Test data. Actual results may vary.

Table 1: Microemulsions of Magnasoft MT90 Textile Enhancer

Ingredients	Twenty Percent Actives Formulation Weight %	Forty-Three Percent Actives Formulation Weight %
Magnasoft MT90 textile enhancer	23.5	50.6
Tridecyl alcohol 6 EO ethoxylate	10.5	25.8
Tridecyl alcohol 12 EO ethoxylate	1.8	4.45
Glacial acetic acid	0.4	1.00
Sodium acetate	0.3	0.75
Water	63.5	17.4

Procedure

1. Charge Magnasoft MT90 textile enhancer and ethoxylates. Mix well until fully homogeneous.
2. Dissolve the sodium acetate and acetic acid into the water.
3. Slowly add the water solution to the silicone/surfactant blend while mixing. Avoid stirring too much air into the mixture.
4. Filter into the containers.

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Performance Data (continued)

The data presented in Table 3 demonstrate the durable character of Magnasoft MT90 textile enhancer on two types of fabric. Remarkably, after ten home laundries, almost half of the silicone that was originally deposited on the 100% cotton knit was still present.

Table 3: Wash Permanency of Magnasoft MT90 Textile Enhancer

	Percent Total Silicone on Fabric (BF3 digestive method)	Number of Home Laundries
100% cotton knit	100	0
	55	5
	50	10
65/35 polyester/cotton	100	0
	68	1
	49	3
	43	5

Note: Test data. Actual results may vary.

Patent Status

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