

Magnasoft* DerMa NT

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Description

Magnasoft Derma NT 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 Derma NT textile enhancer can be applied by spray but is particularly well suited for exhaust applications, where its outstanding emulsion stability allows it to deliver full benefits to the end user.

Magnasoft Derma NT textile enhancer is a new textile auxiliary agent designed to deliver a hydrophilic, voluminous, silky hand to all types of fabrics at lower use levels than other products and, very significantly, to retain these performance attributes through several home laundry cycles.

Key Features and Benefits

- Combines a silky feel and a rich, bulky hand for a unique and unusually powerful softness effect
- Does not alter the hydrophilic nature of cotton and cotton blends
- Increases the hydrophilicity of synthetics
- Provides stretch recovery with a significant elastomeric effect particularly on knits
- Gives in depth softness
- Is effective on virtually all types of fibers
- Provides softness and durability effects that are fast to at least ten home laundry washes, and that are particularly pronounced with cellulosic fibers.
- Almost self-emulsifiable; can generate emulsions that possess extreme shear and pH stability (acid and alkaline)
- Causes virtually no yellowing of white or light shade goods
- Does not affect the color of dark fabrics
- Odor free

Typical Physical Properties

Appearance	Colorless to slightly brown fluid
Viscosity, cSt, 25°C/77°F	15,000
Density, gr/cm ³	0.980

Potential Applications

Magnasoft Derma NT textile enhancer is a textile auxiliary agent that may add significant value to all types of knit and woven fabrics. Magnasoft Derma NT textile enhancer is particularly effective on knits where it provides the typical silicone softener effects and also increases their stretch recovery. Magnasoft Derma NT textile enhancer is effective on woven fabrics and is compatible with durable press resin and fluorocarbon soil release finishes.

Magnasoft Derma NT textile enhancer is normally applied as a water emulsion. Due to its polar nature, Magnasoft Derma NT 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 Derma NT textile enhancer 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 min, pump level 6) demonstrated excellent emulsion stability. As a result, Magnasoft Derma NT textile enhancer can be used under very demanding conditions (jet finishing, EVAC, etc.).

Table 1: Microemulsions of Magnasoft Derma NT Textile Enhancer

Ingredients	Twenty Percent Actives Formulation Weight %	Forty-Three Percent Actives Formulation Weight %
Magnasoft Derma NT 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 Derma NT textile enhancer and ethoxylates. Mix well till 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.

Processing Recommendations

Performance Comparison

The data presented in Table 2, demonstrate excellent softness, good wettability and no yellowing of various fabrics treated with Magnasoft Derma NT 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

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(for the 0.5% silicone pick up).

Table 2. Performance of Magnasoft Derma NT Textile Enhancer

	Add-on (% BOWF)	Softness Rating ⁽¹⁾	Wicking Height (mm) ⁽²⁾	Wettability (sec.) ⁽³⁾	Whiteness ⁽⁴⁾
100% Cotton Terrycloth					
Magnasoft Derma NT textile enhancer	0.25	6.1	52	4	77
Magnasoft Derma NT textile enhancer	0.5	6.5	49	5	76
Magnasoft HSSD textile softener	0.25	4.2	55	Instant	78
Magnasoft HSSD textile softener	0.25	6.0	50	9	77
Untreated	–	1.0	39	3	79
100% Cotton Knit					
Magnasoft Derma NT textile enhancer	0.25	6.5	70	12	64
Magnasoft Derma NT textile enhancer	0.5	6.4	69	10	63
Magnasoft HSSD textile softener	0.25	4.3	79	Instant	65
Magnasoft Prime textile softener	0.25	6.4	66	8	63
Untreated	–	1.3	60	5	66
65/35 Polyester/Cotton					
Magnasoft Derma NT textile enhancer	0.25	6.2	48	20	70
Magnasoft Derma NT textile enhancer	0.5	6.2	49	18	70
Magnasoft HSSD textile softener	0.25	4.3	56	2	71
Magnasoft Prime textile softener	0.25	6.0	55	20	72
Untreated	–	1.0	53	8	72
100% Polyester					
Magnasoft Derma NT textile enhancer	0.25	5	66	6	62
Magnasoft Derma NT textile enhancer	0.5	4.5	65	5	61
Magnasoft HSSD textile softener	0.25	5.3	65	Instant	62
Magnasoft Prime textile softener	0.25	6.2	65	11	64
Untreated	–	2.7	39	76	65
100% Nylon					
Magnasoft Derma NT textile enhancer	0.25	5.1	70	11	65

Magnasoft Derma NT textile enhancer	0.5	5.9	65	9	68
Magnasoft HSSD textile softener	0.25	4.3	59	1	61
Magnasoft Prime 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.

The data presented in Table 3 demonstrate the durable character of Magnasoft Derma NT textile enhancer on two types of fabric. Remarkably, we found that 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 Derma NT 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

Patent Status

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