

Customer: **Fulgar S.p.A**

via: LV

Report Number: LS13-00917

Ref: Option 1

1. Sample Details

#	Description	Treatment
1	Standard PES control (100% PES, Woven)	Untreated
2	Option 1; Out: Lot 7690/0991/LT92; In: Q/Skin-4 Pure MB 4/34 (PES/PA, Knitted)	
3	Option 2; Out: Lot 7690/0991/LT92; In: Q/Skin-7 Pure MB 8/68 (PES/PA, Knitted)	
4	Option 3; Out: Lot 7690/0991/LT92; In: 44/34 N Pure MB ylon SD (PES/PA, Knitted)	

Sample handling: Tested as received
Application method: Fiber spinning
Dry/cure method: Mill settings
Laundry conditions: DIN EN ISO 6330 (6A, 40°C)



2. Methods

Methods	Ref	Organisms
ISO 20743	[1]	Klebsiella pneumoniae (ATCC 4352)

Note: See references at end for details of test methods.

3. Results

ISO 20743: Klebsiella pneumoniae (ATCC 4352)

#	Sample	Log cfu		Percent reduction (%)	Log reduction	Activity
		Mean	St.Dev			
1	Standard PES control (initial)	4.3	0.1			
1	Standard PES control	7.4	0.2			
2	Option 1; Out: Lot 7690/0991/LT92; In: Q/Skin-44/34, Unwashed	2.0	0.0	99.9996	5.4	Very good
3	Option 1; Out: Lot 7690/0991/LT92; In: Q/Skin-44/34, 1x 40°C	2.0	0.0	99.9996	5.4	Very good
8	Option 1; Out: Lot 7690/0991/LT92; In: Q/Skin-44/34, 30x 40°C	2.0	0.0	99.9996	5.4	Very good
9	Option 1; Out: Lot 7690/0991/LT92; In: Q/Skin-44/34, 50x 40°C	2.0	0.0	99.9996	5.4	Very good
14	Option 1; Out: Lot 7690/0991/LT92; In: Q/Skin-44/34, 100x 40°C	2.3	0.5	99.9992	5.1	Very good
4	Option 2; Out: Lot 7690/0991/LT92; In: Q/Skin-78/68, Unwashed	2.0	0.0	99.9996	5.4	Very good
5	Option 2; Out: Lot 7690/0991/LT92; In: Q/Skin-78/68, 1x 40°C	2.8	1.4	99.9974	4.6	Very good
10	Option 2; Out: Lot 7690/0991/LT92; In: Q/Skin-78/68, 30x 40°C	2.0	0.0	99.9996	5.4	Very good
11	Option 2; Out: Lot 7690/0991/LT92; In: Q/Skin-78/68, 50x 40°C	2.0	0.0	99.9996	5.4	Very good
15	Option 2; Out: Lot 7690/0991/LT92; In: Q/Skin-78/68, 100x 40°C	2.1	0.2	99.9995	5.3	Very good
6	Option 3; Out: Lot 7690/0991/LT92; In: 44/34 Nylon SD, Unwashed	2.0	0.0	99.9996	5.4	Very good
7	Option 3; Out: Lot 7690/0991/LT92; In: 44/34 Nylon SD, 1x	2.0	0.0	99.9996	5.4	Very good
12	Option 3; Out: Lot 7690/0991/LT92; In: 44/34 Nylon SD, 30x 40°C	2.6	1.0	99.9984	4.8	Very good
13	Option 3; Out: Lot 7690/0991/LT92; In: 44/34 Nylon SD, 50x 40°C	2.3	0.5	99.9993	5.1	Very good
16	Option 3; Out: Lot 7690/0991/LT92; In: 44/34 Nylon SD, 100x 40°C	2.9	1.6	99.9967	4.5	Very good

4. Remarks

- All fabrics show very good antimicrobial activity beyond 100 x 40 °C washes.

5. References

- [1] ISO 20743: "DIN EN ISO 20743:2007, Textiles – Determination of antibacterial activity of antibacterial finished products", International Organization for Standardization (2007) [Note: equivalent to JIS L 1902:2002].

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MIS provides microbiological testing services primarily for industrial customers assessing the characteristics of developmental products. MIS also provides a depth of expertise in fundamental aspects of microbiology gained throughout many years of world-leading research. Target customers are primarily companies working with antimicrobial treatments on textiles, plastics, and coatings.

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