



# Microbe Investigations AG

## LS20-00746

Report date: May 26, 2020

Customer: Mario Cavelli SRL

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**Microbe Investigations AG (MIS) is a spin-off company of ETH Zürich**

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.

More information: [www.microbe-investigations.com](http://www.microbe-investigations.com)



## Test report overview

General Info	Name	Contact	HeiQ KAM
Customer	Mario Cavelli SRL	A. Cavelli	S. Taruselli
Distributor	-	-	-
Brand owner	-	-	-
Brand label	-	Application at	Client
Reason for testing	QA for client	Application by	Not specified
HeiQ Effects	HeiQ Viroblock / Barrier (FC 6)	Scale	Pilot plant

Test methods carried out in this report		
Effect / Property	Testing standard	Test parameter
Conditioning of textiles	ISO139:2005	Conditioning of textiles before testing
Water repellency: Spray test	AATCC TM 22-2014	Spray test for water repellency
Antibacterial test (hydrophilic fabrics)	ISO 20743:2013	Bacterium: Staphylococcus aureus (ATCC 6538P)
Antibacterial "shake flask" test	ASTM E 2149-13a	Bacterium: Staphylococcus aureus (ATCC 6538P)


Test results: Excellent - Perfect application // no adjustment on recipe or application needed

Test summary / comments:

- All fabrics show very good antimicrobial activity.
- Spray of ECRU, ELBA FR fabric is 75

## Samples, finishing process and textile information

Sample number	Sample description
1	AZZURRO, TWELVE TREVIRA CS; NPJ03 150 g/l
2	BEIGE, SELVA; NPJ03 150 g/l
3	MARRONE, META; NPJ03 150 g/l
4	NERO, TABLET; NPJ03 150 g/l
5	ECRU, ELBA FR; NPJ03 70 g/l, WDSL 11 g/l

Recipe	Sample number				
Product	1	2	3	4	5
Viroblock NPJ03 (17200) [g/l]					
Barrier WDSL New [g/l]					11
Substrates	1	2	3	4	5
Polyester [%]	100	34	34	57	51
Cotton [%]		66	66	43	
Textile information	1	2	3	4	5
Weight [g/m2]	110.0	220.0	220.0	215.0	134.0
Construction	WOV	WOV	WOV	WOV	WOV
Structure	-	-	-	-	-

Legend:

Construction process	Textile structure
WOV = Woven	

## Antimicrobial Testing

Recipe	Sample number				
Product	1	2	3	4	5
Viroblock NPJ03 (17200) [g/l]					
Barrier WDSL New [g/l]					11
ISO 6330 parameters	1-1	2-1	3-1	4-1	5-2
Tabellarischer Bericht	0	0	0	0	0
Drying conditions					

### ISO 20743: Staphylococcus aureus (ATCC 6538P)

Control	Intial	After 18 h			
Log cfu	4.5	6.7			
Sub-Samples	1-1	2-1	3-1	4-1	
Log cfu Sample (staph)	2.0	2.0	2.0	2.0	
Percent reduction Sample (staph) [%]	99.9982	99.9982	99.9982	99.9982	
Log reduction Sample (staph)	4.7	4.7	4.7	4.7	
Activity Sample (staph)	++	++	++	++	

### ASTM E 2149: Staphylococcus aureus (ATCC 6538P)

Control	Result structure	Result structure	Result structure
PlateCFU	7	2	7
Plate dilution	5	5	5
Log cfu	7.5*10 <sup>0</sup>	7.0*10 <sup>0</sup>	7.5*10 <sup>0</sup>
Sub-Samples	5-2		
Percent reduction Sample (staph) [%]	99.9948		
Log reduction Sample (staph)	4.3		
Activity Sample (staph)	++		

