Microbe Investigations AG

LS20-03343

Report date: November 17, 2020

Customer: HeiQ Materials AG

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SWISS TECH INSIDE

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

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Test report overview

General Info	Name	Contact	Key Account Manager
Customer	HeiQ Materials AG	M. Meyer	C. Centonze
Distributor	-	-	-
Brand owner	-	-	-
Brand label	-	Application at	HeiQ
Reason for testing	Quality validation	Application by	Padding (dry-in-wet)
Effects	HeiQ Viroblock	Scale	2 - lab scale-up

Test methods carried out in this report		
Effect / Property	Testing standard	Test parameter
Domestic laundering	ISO 6330:2013	6M: 60°C, moderate setting (easy care)
Quantitative antibacterial test on textiles	ISO 20743:2013	Bacterium: Staphylococcus aureus (ATCC 6538P)
Quantitative antibacterial test on textiles	ISO 20743:2013	Bacterium: Klebsiella pneumoniae (ATCC 4352)
Quantitative antiviral test on textiles	ISO 18184:2019	Betacoronavirus 1, strain OC43 (ATCC VR-1558)

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

Test summary / comments:

- In the test ISO 20743 the sample "Black knit PES fabric; NPJ03 10%" shows good antimicrobial activity versus ***Staphylococcus aureus*** and versus ***Klebsiella pneumoniae***, initially, after 15, and after 30 home launderings.
- In the test ISO 18184 the sample "Black knit PES fabric; NPJ03 10%" shows good antiviral activity versus ***Beta Coronavirus (Strain: OC43)***, initially, after 15, and after 30 home launderings.

Samples, finishing process and textile information

Sample	Sample description
1	Black knit PES fabric; NPJ03 10%

Recipe	Sample number
Product	1
Viroblock NPJ03 (17207) [g/l]	135
Clean DEC [g/l]	2
Process CAG (10%) [g/l]	2
Parameters	1
Pick-up [%]	75.5
Overfeed [%]	0
Drying Temp. [°C]	120
Drying Time [s]	120
Drying Speed [m/min]	3
Curing Air Temp. [°C]	160
Curing Time [s]	60
Curing Speed [m/min]	1
Substrates	1
Polyester [%]	100
Textile information	1
Weight [g/m2]	-
Construction	CKN
Structure	-

Legend:

Construction process	*Textile structure*
CKN = Circular Knit	

Antibacterial Testing

Recipe	Sample number		
Product	1		
Viroblock NPJ03 (17207) [g/l]	135		
Clean DEC [g/l]	2		
Process CAG (10%) [g/l]	2		
ISO 6330 parameters	1-1	1-2	1-3
ISO 6330 6M		15	30
Drying conditions		A	A

ISO 20743: Staphylococcus aureus (ATCC 6538P)

Control	Intial	After 18 h	
Log cfu	4.13	6.87	
Sub-Samples	1-1	1-2	1-3
Log cfu Sample (staph)	2.00	2.00	2.20
Percent reduction Sample (staph) [%]	99.999	99.999	99.998
Log reduction Sample (staph)	4.90	4.90	4.70
Activity Sample (staph)	++	++	++

ISO 20743: Klebsiella pneumoniae (ATCC 4352)

Control	Intial	After 18 h	
Log cfu	4.44	7.10	
Sub-Samples	1-1	1-2	1-3
Log cfu Sample (klebs)	2.00	2.68	2.00
Percent reduction Sample (klebs) [%]	99.999	99.996	99.999
Log reduction Sample (klebs)	5.10	4.40	5.10
Activity Sample (klebs)	++	++	++

Antiviral Testing

Recipe	Sample number		
Product	1		
Viroblock NPJ03 (17207) [g/l]	135		
Clean DEC [g/l]	2		
Process CAG (10%) [g/l]	2		
ISO 6330 parameters	1-1	1-2	1-3
ISO 6330 6M		15	30
Drying conditions		A	A

ISO 18184: Betacoronavirus 1 (ATCC VR-1558)

Sub-Samples	1-1	1-2	1-3
Virus strain	Betacoronavirus 1 (ATCC VR-1558)	Betacoronavirus 1 (ATCC VR-1558)	Betacoronavirus 1 (ATCC VR-1558)
lg(Va) (control, immediately) Betacoronavirus 1	7.22	7.15	7.22
lg(Vc) (sample, after 2 hours) Betacoronavirus 1	3.45	4.24	4.94
Antiviral activity Value Mv Betacoronavirus 1	3.80	2.90	2.30
Percent reduction Betacoronavirus 1 [%]	99.983	99.879	99.475
Activity Betacoronavirus 1	Pass	Pass	Pass