

TEST REPORT

LAB NO. : 2003451/ 1 - 4	DATE: 28/09/2020
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NAME OF CUSTOMER : M/S. REAL RELIEF

ADDRESS : Essen 26,
6000 Kolding, Denmark

REFERENCE : Letter Ref. dated September 08, 2020
Kind Attention: Torben Holm Larsen

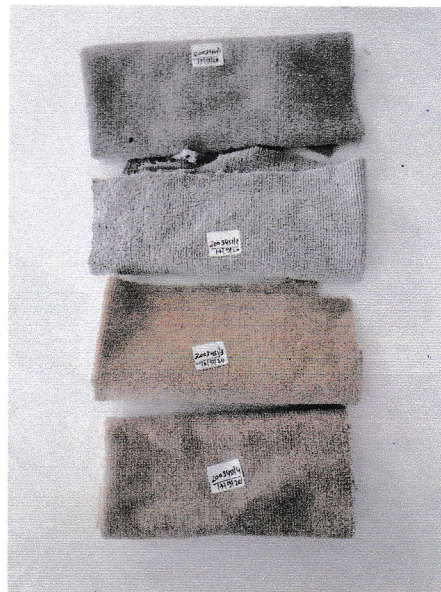
DATE OF RECEIPT : 17/09/2020

DATE OF INITIATION : 20/09/2020

DATE OF COMPLETION : 26/09/2020

SAMPLE DESCRIPTION : Towel Sample labeled as –

Sr. No.	Description	washes
1.	Super Towel fabric –grey	Original
2.	Super Towel fabric –grey	after 20 washes
3.	Super Towel fabric –Beige	Original
4.	Super Towel fabric –Beige	after 20 washes
Untreated lab control		



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BIOTECH TESTING SERVICES

Name of Test:

Determination of Antibacterial activity and efficacy of textile products by JIS L 1902: 2015 - **Quantitative Absorption Method**

ANTIBACTERIAL ACTIVITY

1. Super Towel fabric – grey – Original

Test Bacteria	Staphylococcus aureus		Klebsiella pneumoniae	
Strain Number	ATCC 6538		ATCC 4352	
Concentration of inoculums (cfu/ ml)	2.00 x 10 ⁵		2.10 x 10 ⁵	
Difference of Extremes for three control specimens Untreated lab control (log) (Condition < 1)	Immediately after inoculation	Immediately after incubation	Immediately after inoculation	Immediately after incubation
	0.017	0.051	0.013	0.075
Difference of Extremes for three Test specimens (log) (Condition < 2)	Immediately after inoculation	Immediately after incubation	Immediately after inoculation	Immediately after incubation
	0.021	0.000	0.008	0.000
Growth value of F (F = log C ₁ – log C ₀)	+1.516: (log C ₁ : + 6.52, Log C ₀ : +5.01)		+1.523: (log C ₁ : +6.53, Log C ₀ : +5.01)	
Growth value of G (G = log T ₁ – log T ₀)	-4.010: (log T ₁ : +1.00 Log T ₀ : +5.01)		-4.037: (log T ₁ : +1.00, Log T ₀ : +5.03)	
Antibacterial activity value (A = F - G)	>5.52		>5.56	
Measuring Method	Plate Count Method			
Type of Sample Material	Towel Sample			
Sterilisation Method	Autoclave			
Incubation Time	20 hrs.			

2. Super Towel fabric –grey – after 20 washes

Test Bacteria	Staphylococcus aureus		Klebsiella pneumoniae	
Strain Number	ATCC 6538		ATCC 4352	
Concentration of inoculums (cfu/ ml)	2.00 x 10 ⁵		2.10 x 10 ⁵	
Difference of Extremes for three control specimens Untreated lab control (log) (Condition< 1)	Immediately after inoculation	Immediately after incubation	Immediately after inoculation	Immediately after incubation
	0.017	0.051	0.013	0.075
Difference of Extremes for three Test specimens (log) (Condition< 2)	Immediately after inoculation	Immediately after incubation	Immediately after inoculation	Immediately after incubation
	0.025	0.033	0.012	0.065
Growth value of F (F= log C ₁ – log C ₀)	+1.516: (logC ₁ : + 6.52, Log C ₀ :+5.01)		+1.523: (logC ₁ : +6.53, Log C ₀ :+5.01)	
Growth value of G (G= log T ₁ – log T ₀)	-1.414: (logT ₁ : +3.59 Log T ₀ :+5.01)		-1.098: (logT ₁ : +3.93, Log T ₀ :+5.03)	
Antibacterial activity value (A= F - G)	2.93		2.62	
Measuring Method	Plate Count Method			
Type of Sample Material	Towel Sample			
Sterilisation Method	Autoclave			
Incubation Time	20 hrs.			

3. Super Towel fabric – Beige - Original

Test Bacteria	Staphylococcus aureus		Klebsiella pneumoniae	
Strain Number	ATCC 6538		ATCC 4352	
Concentration of inoculums (cfu/ ml)	2.00 x 10 ⁵		2.10 x 10 ⁵	
Difference of Extremes for three control specimens Untreated lab control (log) (Condition< 1)	Immediately after inoculation	Immediately after incubation	Immediately after inoculation	Immediately after incubation
	0.017	0.051	0.013	0.075
Difference of Extremes for three Test specimens (log) (Condition< 2)	Immediately after inoculation	Immediately after incubation	Immediately after inoculation	Immediately after incubation
	0.017	0.000	0.008	0.000
Growth value of F (F= log C ₁ – log C ₀)	+1.516: (logC ₁ : + 6.52, Log C ₀ :+5.01)		+1.523: (logC ₁ : +6.53, Log C ₀ :+5.01)	
Growth value of G (G= log T ₁ – log T ₀)	-4.010: (logT ₁ : +1.00, Log T ₀ :+5.01)		-4.025: (logT ₁ : +1.00, Log T ₀ :+5.02)	
Antibacterial activity value (A= F - G)	>5.52		>5.54	
Measuring Method	Plate Count Method			
Type of Sample Material	Towel Sample			
Sterilisation Method	Autoclave			
Incubation Time	20 hrs.			

4. Super Towel fabric – Beige - after 20 washes

Test Bacteria	Staphylococcus aureus		Klebsiella pneumoniae	
Strain Number	ATCC 6538		ATCC 4352	
Concentration of inoculums (cfu/ ml)	2.00 x 10 ⁵		2.10 x 10 ⁵	
Difference of Extremes for three control specimens Untreated lab control (log) (Condition < 1)	Immediately after inoculation	Immediately after incubation	Immediately after inoculation	Immediately after incubation
	0.017	0.051	0.013	0.075
Difference of Extremes for three Test specimens (log) (Condition < 2)	Immediately after inoculation	Immediately after incubation	Immediately after inoculation	Immediately after incubation
	0.013	0.079	0.008	0.047
Growth value of F (F= log C ₁ – log C ₀)	+1.516: (log C ₁ : + 6.52, Log C ₀ :+5.01)		+1.523: (log C ₁ : +6.53, Log C ₀ :+5.01)	
Growth value of G (G= log T ₁ – log T ₀)	-1.970: (log T ₁ : +3.04, Log T ₀ :+5.01)		-1.288: (log T ₁ : +3.74 Log T ₀ :+5.03)	
Antibacterial activity value (A= F - G)	3.48		2.81	
Measuring Method	Plate Count Method			
Type of Sample Material	Towel Sample			
Sterilisation Method	Autoclave			
Incubation Time	20 hrs.			

Antibacterial Efficacy:

Antibacterial Value A	Antibacterial Efficacy
2.0 ≤ A < 3.0	Effect
A ≥ 3.0	Full effect

COMMENT:

When tested as specified, Towel labeled as **Super Towel fabric - grey - Original** and **Super Towel fabric – Beige - Original** has shown **Full Effect Antibacterial Efficacy** by Quantitative Assessment of activity; **Super Towel fabric -s grey - after 20 washes** and **Super Towel fabric - Beige - after 20 washes** have shown **Full Effect Antibacterial Efficacy** by Quantitative Assessment of activity by JIS L 1902: 2015 Test Method.



For BIOTECH TESTING SERVICES



Dr Shilpa U. Nair
Quality Manager
(Authorized Signatory)

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