

**TEXTILES - DETERMINATION OF ANTIBACTERICIDAL ACTIVITY OF TEXTILE PRODUCTS**

**ACCORDING TO EN ISO 20743:2013**

**TEST REPORT N° 04/2024**

<b>a) Identification of the test laboratory</b>	Laboratório de Microbiologia Aplicado à Saúde (LMAS) Centro de Engenharia Biológica, Universidade do Minho	
<b>b) Identification of the client</b>		
- Name	Success Gadget, Nanotecnologia e Novos Materiais, Lda	
- Address	Rua Filipa Borges, 1245, 4750-823 Barcelos, Portugal	
<b>c) Identification of the sample</b> (data provided by the client, the laboratory is not responsible for the information provided by the client)		
- Product name	Care Us Breath	
- Batch number	CUB231109	
- Expiration date	11.2025	
- Storage conditions	Ambient temperature	
- Manufacturer	Success Gadget, Nanotecnologia e Novos Materiais, Lda	
- Manufacturer recommended product diluent	Not disclosed	
- Active substances and their concentration	Hydrogen Peroxide (1.6% (w/w)); Chlorhexidine (1.0% (w/w)); Ethanol (5.0 % (w/w))	
- Product Appearance	Whitish (Please shake before use)	
<b>d) Description of the sample by the laboratory</b>		
- Delivery Date	20/11/2023	
- Product Appearance	Transparent Liquid	
- Application of product	170 mL of Care Us Breath in 5 kg of textile samples.	
<b>e) Test method and its validation</b>		
- Method	Absorption method	
- Measuring method	Plate count method	
- Sterilization method	Without sterilization	
<b>f) Experimental Conditions</b>		
- Period of analysis	20/11/2023 – 24/11/2023	
- Contact times	24 hours ± 1 hours	
- Temperature of assay	(20 ± 1) °C	
- Temperature of incubation	(37 ± 1) °C	
- Identification of the test strains	- <i>Staphylococcus aureus</i> ATCC 6538 - <i>Klebsiella pneumoniae</i> ATCC 11296	
<b>g) Test results (See table A)</b>		
<b>h) Special remarks regarding the results</b>		
- All controls and validation were within their baseline limits.		
- Antibacterial value $2 \leq A < 3$ , the efficacy of antibacterial property of the test fabric can be considered significant.		
- Antibacterial value $A \geq 3$ , the efficacy of antibacterial property of the test fabric can be considered strong		
<b>i) Conclusion</b>		
<b>Name of test bacteria</b>	<b>Antibacterial value: A</b>	<b>Comment</b>
<i>Staphylococcus aureus</i> ATCC 6538	> 5.2	Pass, the efficacy of antibacterial property of all samples treated with Care Us Breath can be considered strong
<i>Klebsiella pneumoniae</i> ATCC 11296	> 5.3	Pass, the efficacy of antibacterial property of all samples treated with Care Us Breath can be considered strong
All samples treated with <b>Care Us Breath CUB231109</b> at different times of application show <b>strong antibacterial activity</b> , based on EN ISO 20743:2021, during 24 hours of contact, for all bacteria tested.		

Technical manager

Laboratory technician

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Name of test bacteria	<i>Staphylococcus aureus</i> ATCC 6538		<i>Klebsiella pneumoniae</i> ATCC 11296	
Concentration of Inoculum (CFU/mL)	1.35 × 10 <sup>5</sup>		1.33 × 10 <sup>5</sup>	
Difference of extremes for the three control specimens (lg) (condition:less than 1)	0 h	24 h	0 h	24 h
	< 0.3	< 0.3	< 0.5	< 0.9
The growth value on the control fabric $F = \log C_t - \log C_0$	+ 3.4 ( $\log C_t : + 8.5 ; \log C_0 : + 5.1$ )		+ 3.5 ( $\log C_t : + 8.6 ; \log C_0 : + 5.1$ )	

170 mL of Care Us Breath

Difference of extremes for the three antibacterial testing specimens (lg) (condition:less than 2)	0 h	24 h	0 h	24 h
	< 0.3	< 0.0	< 0.5	< 0.1
The growth value on the antibacterial-treated samples $G = \log T_t - \log T_0$	- 1.8 ( $\log T_t : + 3.3 ; \log T_0 : + 5.1$ )		- 1.8 ( $\log T_t : + 3.3 ; \log T_0 : + 5.1$ )	
Antibacterial activity value $A = F - G$	> 5.2		> 5.3	

- C<sub>t</sub>** Arithmetic average of the number of bacteria obtained from three test samples of control fabric after (24±2) h incubation
- C<sub>0</sub>** Arithmetic average of the number of bacteria obtained from three test samples of control fabric immediately after inoculation
- T<sub>t</sub>** Arithmetic average of the number of bacteria obtained from three antibacterial-treated test samples after (24±2) h incubation
- T<sub>0</sub>** Arithmetic average of the number of bacteria obtained from three antibacterial-treated test samples immediately after inoculation
- F** Growth value on the control fabric
- G** Growth value on the antibacterial-treated samples
- A** Antibacterial activity value

\*\*\*END\*\*\*