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Solution

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Antimicrobial Assessment of Ten PU- Foam Samples

Ten Polyester foam samples market Green, Treated with Ultra-Fresh DW-30, were received from Ürosan Kimya San. A.Ş. on Januar 9th, 2023. At Solution research Laboratory GmbH., Ten samples were treated and tested for antimicrobial activity using a quantitative test method.

PROCEDURE
Quantitative Antibacterial Assessment:

ISO20743 (E) was used to quantitatively test the specimen for antibacterial activity. In brief:

1. A piece of the sample was placed into a container with a lid.
2. A 0.2 mL inoculum of *Escherichia Coli (E,Coli)* (ATCC #6538) was placed, in microdroplets, on the surface of the samples. 0.05% Triton X-100 was added to the inoculum as a wetting agent.
3. The specimen was incubated 24 hours at 37C.
4. 20 mL of Letheen broth was added to the container and shaken. The bacteria in the liquid was quantified by using a series of dilution plates.

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RESULTS

M_a = logarithm of starting bacterial inoculum
M_b = logarithm of number of bacteria after 24 hour incubation on untreated sample / inoculum control (average of 3 specimens) M_c = logarithm of number of bacteria after 24 hour incubation on treated sample (average of 3 specimens)
S = Log Reduction = M_b - M_c

Quantitative Assessment of Activity – ISO20743:2013 Escherichia Coli					
Concentration of starting inoculum (M_a)		log 5.36 x 10^4 = 4.7			
Inoculum Control after 24 hour incubation (M_b)		log 3.55 x 10^6 = 6.5			
Growth Value (F = M_b – M_a)		1.8			
Sample Description		**No. Bacteria Recovered**	**Log Recovery (M_c)**	**Log Reduction (S)**	**% Reduction**
1	01 Green Foam Polyester				Reference
2	02 Green Foam Polyester	4.37 x 10^2	<1,3	>5,20	>99,9%
3	03 Green Foam Polyester	3.39 x 10^1	<1,5	>5,60	>99,9%
4	04 Green Foam Polyester	5.40 x 10^3	<0,9	>5,55	>99,9%
5	05 Green Foam Polyester	4.90 x 10^2	<08	>5,60	>99,9%
6	06 Green Foam Polyester	5.39 x 10^1	<1,3	>5,44	>99,9%
7	07 Green Foam Polyester	4.39 x 10^5	<1,6	>5,32	>99,0%
8	08 Green Foam Polyester	5.25 x 10^6	<07	>5,70	>99,9%
9	09 Green Foam Polyester	3.25 x 10^5	<1,5	>5,00	>99,9%
10	10 Green Foam Polyester	5.60 x 10^4	<1,0	>5,60	>99,0%

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Microbiology Manager

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