

Translation from Bulgarian into English

PROTOCOL No. 149

Re: microbiological tests for antimicrobial activity of paint,
assigned by "Orgachim" JSC, Town of Ruse

1. Materials – a sample of the product – "LEKO WITH SILVER IONS" / SPOR CU IONI DE ARGINT" is delivered to the "Microbiology" lab.
The paint is offered for painting and disinfection of surfaces (walls and ceilings).
2. Purpose – - to establish the antimicrobial activity of the paint..
3. Methodology - the efficiency of the paint is tested for antibacterial test JIS Z 2801:2000.

Principle of the method: two coats of the paint subject to testing are applied on glass plates. After its drying bacterial suspensions of test strains of *E. coli* ATCC 10536, ATCC 15442 *P. aeruginosa*, *S. aureus* ATCC 6538, *E. hirae* ATCC 10541 and *C. albicans* ATCC 10231 are applied and are covered with a sterile glass coverslip. As control samples are used glass plates with no paint applied thereon, but contaminated with the identical amount of cells of the test strains and covered by glass coverslip. Experimental and control samples are incubated for 24 hours at $T = (30 \pm 1)^\circ\text{C}$. The number of surviving cells were quantified.

The initial dose of the test strains (inoculum control) is determined experimentally, by plating on agar medium.

4. Results – reported in a table:

Test material	Quantity of viable cells (KOE/st3) at:				
	<i>E. coli</i>	<i>P. aeruginosa</i>	<i>S. aureus</i>	<i>E. hirae</i>	<i>C. albicans</i>
"LEKO WITH SILVER IONS" / SPOR CU IONI DE ARGINT"	< 10	< 10	< 10	< 10	< 10
Paint Control	$2,4 \cdot 10^5$	$3,8 \cdot 10^5$	$2,1 \cdot 10^5$	$3,3 \cdot 10^5$	$1,5 \cdot 10^4$
Inoculum Control	$1,3 \cdot 10^8$	$4,2 \cdot 10^8$	$2,5 \cdot 10^8$	$1,6 \cdot 10^8$	$2,8 \cdot 10^7$

The obtained test results show more than 99.99% reduction of bacteria and *C. albicans* cells (or > 4 log₁₀ reduction of bacterial and > 3 log₁₀ reduction of *C. albicans* cells).

5. Conclusion: The microbiological tests conducted on "LEKO WITH SILVER IONS" / SPOR CU IONI DE ARGINT" assigned by "Orgachim" JSC, Ruse, show that the paint in the test conditions exhibits a bactericidal and yeasticidal activity to surfaces on which it is applied.

Head of "Microbiology" laboratory: <signed>

/Pl.Dimitrov/

<Stamped with the round seal of Laborex-EAD, Sofia>

LABOREX-EAD
Ref. No. 562-558
Dated: 20.09.2010

The undersigned Tsvetelina Bogomilova Bogdanova do hereby certify that this is a true and correct translation I have made from Bulgarian into English of the document attached hereto. The translation includes 1 page.

Translator: Tsvetelina Bogomilova Bogdanova/

