

<b>SPONSOR</b>	CROMOLOGY ITALIA		
	Via IV Novembre, 4		
	55016 Porcari (LU)		
	ITALY		
<b>TEST METHOD</b>	ISO 22196 - Measurement of antibacterial activity on plastics and other non-porous surfaces		
<b>TEST ITEM</b>			
PRODUCT NAME	DUCOTONE SANI TECH LUCIDO		
MATRIX OF THE PRODUCT	Biocides and Antimicrobials		
ACTIVE INGREDIENT	Not Provided	CONCENTRATION	Not Provided
BATCH	PL0321	CODE	DUC045395
MANUFACTURING DATE	31/07/2020	EXPIRY DATE	31/07/2022
STABILITY	2 years		
MATERIAL ITEM ALIQUOT	LV-MAT-FOV7-20-239-0C37:a		
<b>REFERENCE ITEM</b>			
NAME	DUCOTONE SANI TECH LUCIDO NON TRATTATI		
MATERIAL ITEM ALIQUOT	LV-MAT-FOV7-20-239-0C38:a		
PARCEL REGISTRATION N.	IP-LV-2020217-ADF	RECEIVING DATE	04-Aug-2020
<b>ANALYSIS STARTING DATE</b>	September 17 <sup>th</sup> , 2020	<b>ANALYSIS ENDING DATE</b>	September 19 <sup>th</sup> , 2020
<b>EXPERIMENTAL CONDITIONS</b>			
TEST STRAINS	<i>Staphylococcus aureus</i> <i>Escherichia coli</i>	ATCC 6538P ATCC 8739	
CONTACT TIME	24 hours	INOCULUM VOLUME	0,4 ml
SPECIMENS SIZE	25 cm <sup>2</sup>	COVER FILM SIZE	1600 mm <sup>2</sup>
INACTIVATION OF THE PRODUCT	Dilution- neutralization method - CEN neutralizer (NEU CEN): Lecithin 3 g Polysorbate 80 30 ml Sodium Thiosulfate 5 g L-histidine 1 g Saponin 30 g Tryptone-treated water (q. s.) to 1000 ml		
<b>RESULTS</b>	<b>Log Reductions of viable microorganisms</b>	<b>24 hours</b>	
For details See Addendum#1		<b>Log R</b>	<b>R%</b>
	<i>S. aureus</i> ATCC 6538P	>4,11	>99,993%
	<i>E. coli</i> ATCC 8739	>3,71	>99,981%
<b>CONCLUSIONS</b>	On the basis of obtained results, can be stated that the test item "DUCOTONE SANI TECH LUCIDO" <b>has antimicrobial activity</b> in adopted experimental conditions.		
<b>ADDENDA</b>	Addendum#1 - Data sheet (2 Pages)		

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Reviewed and electronically signed for Study Technical Supervisor Approval by  
Fabiana Faccioli, Employee  
for Eurofins Biolab Srl, on 09-Oct-2020 17:14:46 UTC+02:00



**Measurement of antibacterial activity on  
plastics and other non-porous surfaces  
ISO 22196**

ID. Study: STULV20AA4482-1LV-MAT-FOV7-20-239-0C37:a  
ID. sample: LV-MAT-FOV7-20-239-0C38:aStarted on: 17/09/20**ASSAY**Specimen Area (cmq): 25Film Area (mmq): 1600Volume of inoculum (ml): 0,4Neutralizer: neu cenVolume of Neutralizer (ml): 16

STRAIN		RESULT (cfu/ml)	Bacterial concentration $2,5 \times 10^5 \leq x \leq 10 \times 10^5$ cfu/ml	RESULT (cfu/inoculum)
A38	S. aureus ATCC65389	6,8E+05	COMPLIES	2,7E+05


Contact time	Specimen	1 (cfu/ml)	2 (cfu/ml)	3 (cfu/ml)	Geometric mean (ufc/ml)
t0	Untreated	1,70E+04	1,80E+04	1,70E+04	1,73E+04
	Treated	3,65E+04	3,40E+04	4,10E+04	3,71E+04
t24	Untreated	1,18E+04	4,40E+03	4,70E+04	1,35E+04
	Treated	< 1,00E+00	< 1,00E+00	< 1,00E+00	< 1,00E+00

Contact time	Specimen	1 (ufc/cm <sup>2</sup> )	2 (ufc/cm <sup>2</sup> )	3 (ufc/cm <sup>2</sup> )	Geometric mean (ufc/cm <sup>2</sup> )
t0	Untreated	1,70E+04	1,80E+04	1,70E+04	1,73E+04
	Treated	3,65E+04	3,40E+04	4,10E+04	3,71E+04
t24	Untreated	1,18E+04	4,40E+03	4,70E+04	1,35E+04
	Treated	< 1,00E+00	< 1,00E+00	< 1,00E+00	< 1,00E+00

ASSAY VALIDITY CRITERIA	1	The Log value (L) of cfu/ml recovered immediately after inoculation from the untreated test specimens (NT t <sub>0</sub> ) shall satisfy the following requirement: $(L_{max} - L_{min}) / (L_{mean}) \leq 0,2$	COMPLIES
	2	The average number of viable microorganisms recovered immediately after inoculation from the untreated test specimens (NT t <sub>0</sub> ) shall be within the range $6,2 \times 10^3$ to $2,5 \times 10^4$ cells/cm <sup>2</sup> .	COMPLIES
	3	The number of viable microorganisms recovered from each untreated test specimen after incubation for 24 h (NT t <sub>24h</sub> ) shall not be less than $6,2 \times 10^1$ cells/cm <sup>2</sup> .	COMPLIES

Contact time	Specimen	1 (Log ufc/cm <sup>2</sup> )	2 (Log ufc/cm <sup>2</sup> )	3 (Log ufc/cm <sup>2</sup> )	Log ufc/cm <sup>2</sup>
t0	Untreated	4,23	4,26	4,23	4,24
	Treated	4,56	4,53	4,61	4,57
t24	Untreated	4,07	3,64	4,67	4,11
	Treated	< 0,00	< 0,00	< 0,00	< 0,00

Strain	Log reduction	% Reduction
S. aureus ATCC65389	> 4,11	> 99,993

	<b>Measurement of antibacterial activity on plastics and other non-porous surfaces ISO 22196</b>
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STRAIN		RESULT (cfu/ml)	Bacterial concentration $2,5 \times 10^5 \leq x \leq 10 \times 10^5$ cfu/ml	RESULT (cfu/inoculum)
B5	E.coli ATCC8739	7,3E+05	COMPLIES	2,9E+05

Contact time	Specimen	1 (cfu/ml)	2 (cfu/ml)	3 (cfu/ml)	Geometric mean (ufc/ml)
t0	Untreated	1,83E+04	1,83E+04	1,78E+04	1,81E+04
	Treated	2,75E+04	2,19E+04	2,66E+04	2,52E+04
t24	Untreated	1,67E+05	1,51E+05	1,45E+05	1,54E+05
	Treated	< 3,00E+01	< 3,00E+01	< 3,00E+01	< 3,00E+01

Contact time	Specimen	1 (ufc/cm <sup>2</sup> )	2 (ufc/cm <sup>2</sup> )	3 (ufc/cm <sup>2</sup> )	Geometric mean (ufc/cm <sup>2</sup> )
t0	Untreated	1,83E+04	1,83E+04	1,78E+04	1,81E+04
	Treated	2,75E+04	2,19E+04	2,66E+04	2,52E+04
t24	Untreated	1,67E+05	1,51E+05	1,45E+05	1,54E+05
	Treated	< 3,00E+01	< 3,00E+01	< 3,00E+01	< 3,00E+01

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	2	The average number of viable microorganisms recovered immediately after inoculation from the untreated test specimens (NT t <sub>0</sub> ) shall be within the range $6,2 \times 10^3$ to $2,5 \times 10^4$ cells/cm <sup>2</sup> .	COMPLIES
	3	The number of viable microorganisms recovered from each untreated test specimen after incubation for 24 h (NT t <sub>24h</sub> ) shall not be less than $6,2 \times 10^1$ cells/cm <sup>2</sup> .	COMPLIES

Contact time	Specimen	1 (Log ufc/cm <sup>2</sup> )	2 (Log ufc/cm <sup>2</sup> )	3 (Log ufc/cm <sup>2</sup> )	Log ufc/cm <sup>2</sup>
t0	Untreated	4,26	4,26	4,25	4,26
	Treated	4,44	4,34	4,42	4,40
t24	Untreated	5,22	5,18	5,16	5,19
	Treated	< 1,48	< 1,48	< 1,48	< 1,48

Strain	Log reduction	% Reduction
E.coli ATCC8739	> 3,71	> 99,981