SCUDO

ANTIBACTERIAL ELASTOMERS AND GASKET

ANTIBACTERIAL SEALS AND ELASTOMERS

FOR THE HEALTHCARE SECTOR

A NEW TOOL AGAINST VIRUSES AND BACTERIA

SCUDO FOR THE HEALTHCARE SECTOR

WHAT IS SCUDO

SCUDO is a range of antibacterial elastomers that can be used to make rubber and silicone components for the healthcare sector.

HOW DOES SCUDO WORK

Over time, bacterial and viral colonies grow on rubber and silicone surfaces. These bacterial colonies, which are more and more resistant to normal antibiotic treatments due to their increasingly Antimicrobial Resistance (AMR), are responsible for the spread of dangerous infections.

Thanks to its patented formula, SCUDO gives its products the internal power to eradicate viruses and bacteria, thus reducing the risk of infection.

With SCUDO, we aim at providing producers and consumers with a new tool which can improve the quality of the products related to the healthcare sector, as well as help them protect themselves from dangerous diseases.

THE ADVANTAGES OF SCUDO

Fewer infections, more protection, better production.

- The antimicrobial action destroys Legionella, Salmonella, E. Coli, Listeria, S. Aureus as well as other bacteria that are dangerous to health.
- 99.9% killing of bacteria
- Scientifically proven
- Patented technology
- Guaranteed hygiene
- Lower expenses
- Better products
- Effective against virus SARS-CoV-2

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PROVEN EFFECTIVENESS

The effectiveness of SCUDO technology has been proven by accurate scientific tests carried out by the University of Milan – Department of Biomedical, Surgical and Dental Sciences, Section One Health – and the University of Bologna – Department of Biological, Geological and Environmental Sciences.

The test on the weakening of the microbial load was performed by using a 24 drain wells plate for cell cultures (Ø16 mm, volume 1mL).

In order to allow a better manipulation of the elastomer sheets, a rectangular section of 5cm x 8cm was taken as a sample and from this it was cut out a disc, which had suitable dimensions for its insertion into the above mentioned plate.

Using a sterile gripper, each disc was placed on the bottom of a drain well and then covered with 1 mL of each bacterial suspension.

For the SCUDO tests, the following bacterial species were used at two different concentrations (10^3 UFC/mL and 10^4 UFC/mL):

- Salmonella ATCC 25928
- Staphylococcus Aureus ATCC 6538
- Legionella ATCC 33152
- E. Coli ATCC 25922
- Listeria ATCC 13932

The exposure times (time-point) used to get an indication of the possible dynamics of the weakening of the microbial load were:

– T0: contact with elastomers

– T1: 5 minutes post-touch (PT)

– T2: 30 minutes PT

– T3: 1 hour PT

– T5: 6 hours PT

– T6: 24 hours PT.

At each time-point, a portion of the bacterial suspension (50µL) was appropriately diluted in sterile physiological saline (NaCl 0.9%) and then seeded (50µL) in a solid bottom plate.

After incubation at 37°C for 24 hours, colonies were counted to obtain data regarding the starting load at each time-point.

ANALYSIS METHODOLOGY

The test for the viral strain of SARS-CoV-2_COV2019 was performed on a sample in FKM (fluorinated elastomer) according to the norm ISO 21702:2019, which regulates the measurement of the antiviral activity on elastomers.

The treated sample had the following size: 50 x 50 mm^2, 2 mm thick. The test was performed at 25°C±1°C, the incubation was instead 6 hours long at 37°C±1°C.

	EXPOSURE TIME	AVERAGE VALUE LOG $TCID_{50}$ / ML	N ($TCID_{50}$ / CM^2)	UT	R |UT-AT|	VALID TEST IN CASE OF
NON-TREATED SAMPLE	T0	5.25	1.11×10^6	6.05	/	2.5×10^5 - 1.2×10^6 ($TCID_{50}$ / CM^2)
	T6	4.88	4.74×10^5	40%	/%	/

	EXPOSURE TIME	AVERAGE VALUE LOG $TCID_{50}$/ML	N ($TCID_{50}$/CM^2)	UT	R |UT-AT|	REDUCTION COMPARED TO T0
NON-TREATED SAMPLE	T6	4.50	1.98×10^5	5.30	0.38	82.22%

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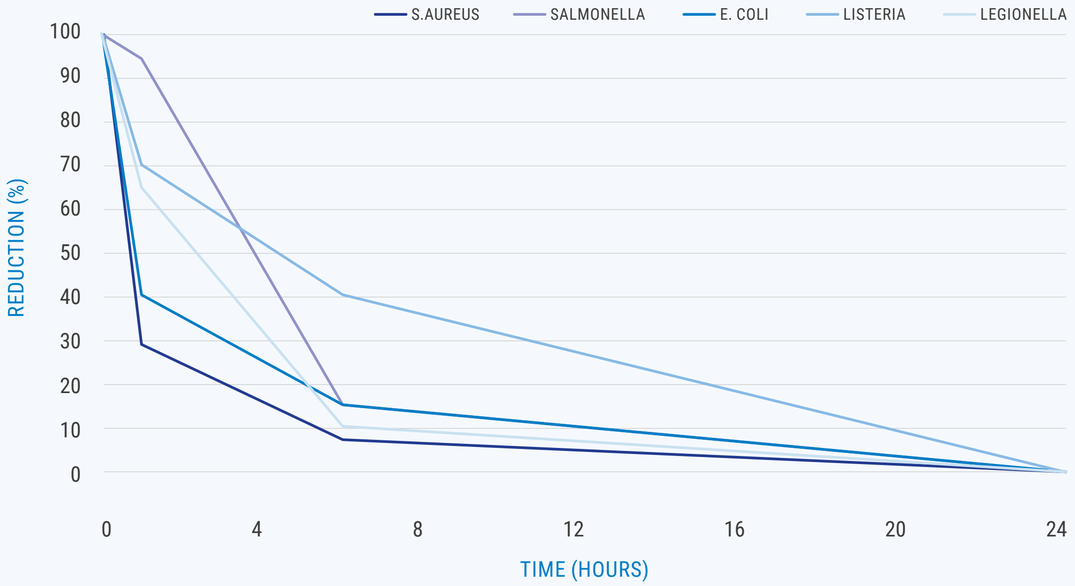
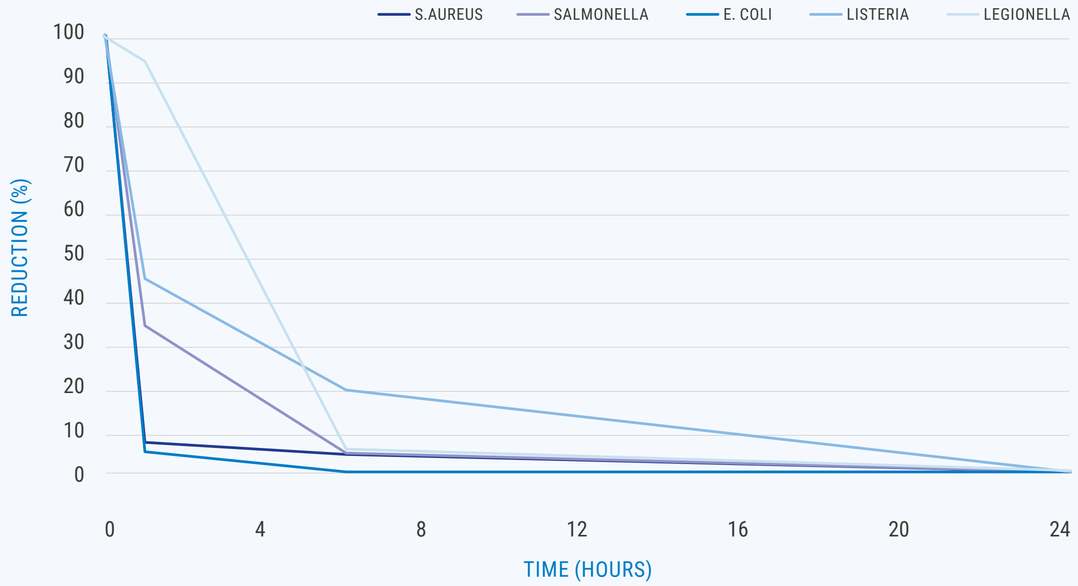
SCUDO SILICONE COMPOUND



TIME (HOURS)	S.AUREUS	SALMONELLA	E.COLI	LISTERIA	LEGIONELLA
0	100%	100%	100%	100%	100%
1	28%	95%	40%	70%	65%
6	7%	14%	15%	40%	10%
24	0%	0%	0%	0%	0%

SCUDO RUBBER COMPOUND



TIME (HOURS)	S.AUREUS	SALMONELLA	E.COLI	LISTERIA	LEGIONELLA
0	100%	100%	100%	100%	100%
1	9%	35%	4%	45%	94%
6	5%	5%	0%	20%	6%
24	0%	0%	0%	0%	0%

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CONTACT US

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