PrimeShield™

COVID-19 Test Report

ISO 21702 approved that it can continuously kill >99.9% of Coronavirus disease 2019 (COVID-19) in the state of forming antibacterial coating.

Unaudited Preliminary Results Project No. 1114-101:
Measurement of Antiviral Activity of a Treated Plastic Film Material upon Direct Contact - per ISO 21702 - Severe Acute Respiratory Syndrome-Related Coronavirus 2 (SARS-CoV-2) (COVID-19 Virus)

Table 1
Titer Results

Sample	Contact time	Replicate	Titer ($Log_{10}TCID_{50}$/mL)	Volume (mL)	Viral Load ($Log_{10}TCID_{50}$)
Virus Stock Titer	N/A		7.30	-	-
Cell Viability Control			no virus was detected, cells remained viable; media was sterile		
Glass petri dish (no film) control	24 hours	1	4.55	10	5.55
Blank Plastic Film	0 hours	1	4.80	10	5.80
	24 hours	1	4.05	10	5.05
Plastic film with PrimeShield	24 hours	1	< 0.83 *	10	< 1.83

* No virus was detected; the theoretical titer was determined based on the Poisson method.
Note: The results are unaudited and preliminary. They are subject to change until the review is complete and a final report is issued

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Table 4
Viral Reduction - Control Fabric

Test Substance	Replicate	Contact Time	Initial Load ($Log_{10}TCID_{50}$)*	Output Load ($Log_{10}TCID_{50}$)	Log_{10} Reduction	Percent Reduction
Plastic film with PrimeShield	1	24 hours	5.05	⩽ 1.83	⩾ 3.22	⩾99.94

* Input load is derived from the control fabric at T_{end}
⩾ Denotes a complete inactivation of the virus challenged.
Note: The results are unaudited and preliminary. They are subject to change until the review is complete and a final report is issued

PrimeShield™

10,000 times rubbing Test Report

ISO 22196:2011 shows that the treated surfaces still remains 99.999% E. coli efficacy after 10,000 times rubbing test

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TEST REPORT

Number : HKGH02625261

(1) Measurement of antibacterial activity on plastics and other non-porous surfaces

Test Standard : International Standard ISO 22196:2011.

Test culture: *Escherichia coli* (ATCC 8739) – 3.6×10^5 CFU/mL
Staphylococcus aureus (ATCC 6538P) – 6.2×10^5 CFU/mL

Test specimen: 50 mm x 50 mm flat square of Plastic film treated with Prime Shield EX
50 mm x 50 mm flat square of untreated sample as control

Neutralizing solution: D/E neutralizing broth

Contact time / temperature: 24 hours / 35°C

Agar medium: Plate Count Agar

Incubation period / temperature of agar: 48 hours / 35°C

Test condition: 0.4 mL bacterial inoculum was added onto rubbed surface of the test specimen sample

Result :

Test microorganism	U_0 Criteria: $3.7 \le U_0 \le 4.4$	U_t Criteria: $U_t \ge 1.8$	A_t	Log R	% R	Comment*
Escherichia coli	4.1	5.8	0.3	5.5	99.999	Significant
Staphylococcus aureus	4.1	3.8	0.5	3.3	99.9	Significant

Remark : U_0 = Log (bacteria recovered from untreated specimen in CFU/cm²) immediately after inoculation
U_t = Log (bacteria recovered from untreated specimen in CFU/cm²) after 24 hours incubation
A_t = Log (bacteria recovered from treated specimen in CFU/cm²) after 24 hours incubation
R = Log reduction value (U_t - A_t)

Reference Rating*:	%R	Antibacterial activity
	≤90%	Not acceptable
	>90 - <99%	Insignificant
	≥99%	Significant

Sample received condition: Sample in closed plastic bag.

Date sample received : Aug 12, 2020
Testing period : Sep 01, 2020 to Sep 09, 2020

(2) Rubbing test

1) The submitted sample (Plastic film treated with PrimeShield EX) was rubbed by the cotton rubbing cloth to and fro in straight line with downward 9N force for 10000 cycles.
2) The rubbed surface was then further test with ISO 22196.

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