

BUMMIN CHEMICAL CO.,LTD.

197, Gwangjeok-ro 65beon-gil, Gwangjeok-myeon, Yangju-si, Gyeonggi-do,
Korea

The following sample(s) was/were submitted and identified by/on behalf of the client as:-

SGS File No.	: AYFN20-14496
Sample Description	: Anti-bacteria copper P.V.C film front
Item no./Lot No.	: -
SGS Ref No.	: AYHA20-04501
Test Period	: 2020. 04. 23 to 2020. 05. 11
Purpose of Test Report	: Data for reference
Client reference data	: Manufacture : BUMMIN CHEMICAL CO.,LTD.
Test Results	: For further details, please refer to following page (s)
Report Comments	: The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report is not related to Korea Laboratory Accreditation and KS Q ISO/IEC 17025. Verify for authenticity and validity in web site : https://twap.sgs.com/sgrsts_cloud



ConradLee

Technical Manager / SGS KOREA

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Results:

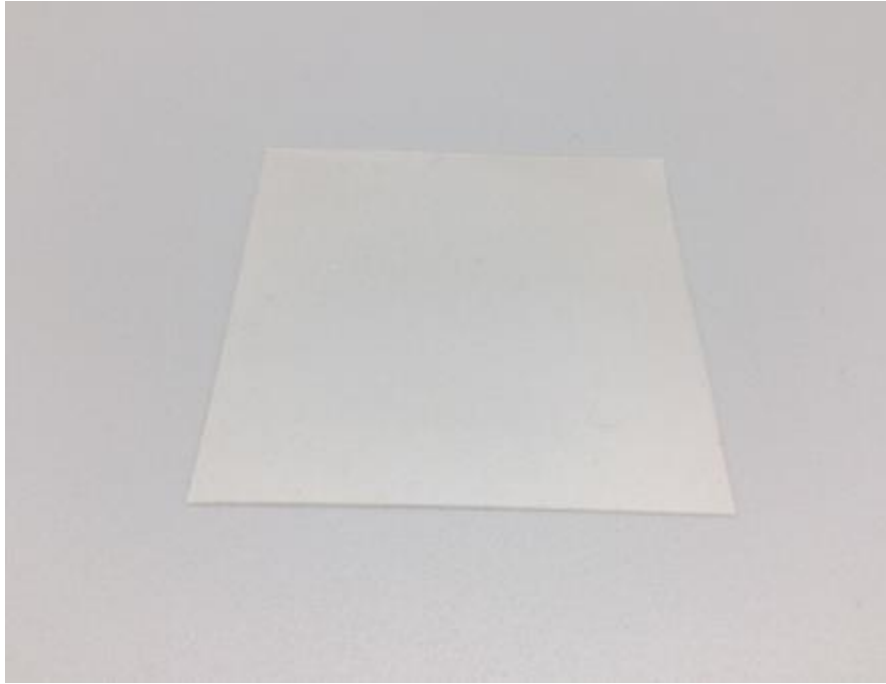
Antimicrobial Activity (JIS Z 2801:2010E)							
Test microorganisms	Initial bacteria number (CFU/film)	Result(s)				Antimicrobial activity	
		Control (CFU/film)	Bacteria number after 24 hr at 35 °C		R	Percentage (%)	
			Sample (CFU/film)				
<i>Escherichia coli</i> ATCC 8739	2.3 x 10 ⁵	6.4 x 10 ⁸	1st	<25	7.4	>99.9%	
			2nd	<25	7.4	>99.9%	
			3rd	<25	7.4	>99.9%	
<i>Staphylococcus aureus</i> ATCC 6538P	2.0 x 10 ⁵	2.6 x 10 ⁸	1st	<25	5.0	>99.9%	
			2nd	<25	5.0	>99.9%	
			3rd	<25	5.0	>99.9%	
<i>Klebsiella pneumoniae</i> ATCC 4352	2.4 x 10 ⁵	1.3 x 10 ⁷	1st	<25	5.7	>99.9%	
			2nd	<25	5.7	>99.9%	
			3rd	<25	5.7	>99.9%	

<Remark>

- 1) Sample material
- 2) Inoculum Concentration :
 - Escherichia coli* : 2.3 × 10⁵ CFU/film
 - Staphylococcus aureus* : 2.0 × 10⁵ CFU/film
 - Klebsiella pneumoniae* : 2.4 × 10⁵ CFU/film
- 3) Method: JIS Z-2801 methods- Pour plate method
- 4) Dilution Medium : 1/500 Nutrient broth (BD)

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Picture of Sample as Received :







AYFN20-14496

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- Antimicrobial Activity of Photo: *Escherichia coli* -





- after 24 hr at 35 ±1 °C

Control	Sample 1 st												
													
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Sample 2nd	Sample 3rd												

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- Antimicrobial Activity of Photo: *Staphylococcus aureus*-





- after 24 hr at 35 ±1 °C

Control	Sample 1 st
	
<p>BACTERIUM: <i>Staphylococcus aureus</i> ATCC 6538P</p> <p>SGS FILE NO. : Control</p> <p>DATE: 2020-05-11 REF.: JIS Z 2801</p>	<p>BACTERIUM: <i>Staphylococcus aureus</i> ATCC 6538P</p> <p>SGS FILE NO. : AYFN20-14496</p> <p>DATE: 2020-05-11 REF.: JIS Z 2801</p>
Sample 2 nd	Sample 3 rd
	
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- Antimicrobial Activity of Photo: *Klebsiella pneumoniae* -

- after 24 hr at 35 ±1 °C

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Sample 2nd	Sample 3rd												

*** End of Report ***

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