



The Compliance Catalyst



## Certificate of Analysis

Lab Ref No.: **PL2006-C19425**

SN: **RS1060347026243028**

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Ooi Kah Wai  
 Chemist  
 IKM No.: L/2452/7352/16  
 AN1: RA8272311879627748

**ICON MARKETING SDN BHD**  
 700J, JALAN LINTANG, AYER ITAM  
 11500 GEORGETOWN PULAU PINANG  
 MALAYSIA

Kee Kai Loon  
 Microbiologist & Biotechnologist  
 Food Analyst No: MJMM 0469  
 AN2: RA2738899075298446

Date of Issue: 2020-06-29  
 Date of Received: 2020-06-15  
 Date of Completion: 2020-06-29

Sample Description: Face Mask

Challenge Flow Rate: 28.3 L/min  
 Challenge level:  $4.8 \times 10^5$  cfu  
 Mean Particle Size: ~3.0 um  
 Positive control: 1754 cfu

Total CFU Recovered	Bacterial Filtration Efficiency %
67	96.2

### Antibacterial activity

Test organism	Staphylococcus aureus ATCC 6538
Concentration of inoculum (cfu/ml)	$1.3 \times 10^5$
Growth value F ( $F = \log C_t - \log C_0$ )	$5.7 - 4.6 = 1.1$
Growth value G ( $G = \log T_t - \log T_0$ )	$1.6 - 4.8 = -3.2$
Antibacterial activity value ( $A = F - G$ )	$1.1 - (-3.0) = 4.3$
Measuring method	Pour plate method
Incubation time	24 h

Efficacy of antibacterial property	Antibacterial value: A
Significant	$2 < A < 3$
Strong	A more than or equal to 3



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### Antifungal activity

Test organism	Aspergillus niger ATCC 16404
Concentration of inoculum (cfu/ml)	$2.0 \times 10^5$
Growth value F ( $F = \log C_t - \log C_0$ )	$5.9 - 4.9 = 1.0$
Growth value G ( $G = \log T_t - \log T_0$ )	$4.8 - 5.1 = -0.3$
Antifungal activity value ( $A = F - G$ )	$1.0 - (-0.3) = 1.3$
Measuring method	Pour plate method
Incubation time	48 h
A value	Explanation
$A < 1$	No effect
$2 > A > 1$	Fungistatic with small effect
$3 > A > 2$	Fungistatic with medium effect
$A > 3$	Fungistatic with full effect
$T_t = 0$	Fungicidal effect

Remark: The specification refer to standard specification for performance of materials used in medical face masks ASTM F2100-19.

Test Description	Unit	Result(s)	Spec	Method or Equipment Used
Bacterial Filtration Efficiency*	%	96.2	> 95	ASTM F2101
Differential Pressure (Breathability)*	mm H <sub>2</sub> O / cm <sup>2</sup>	1.01	< 5.00	MIL-M-36954C
Flammability*		Class 1	Class 1	16 CFR part 1610
Water Absorption*		Hydrophilic	Hydrophilic	Water dripping Test
Antibacterial Activity*		4.3	-	ISO 20743:2013 (E)
Antifungal activity*		1.3	-	ISO 13629-2:2014 (E)

– END OF REPORT –



**MY CO2 SDN BHD** 200601024684 (744438-M)  
**MY CO2 (PG) SDN BHD** 201701042071 (1256244-P) | SAMP No. 384  
16, LENGKOK KIKIK 1, TAMAN INDERAWASIH, 13600 PERAI, PENANG, MALAYSIA.  
Tel: +604 - 380 8282 Fax: +604 - 380 8280  
**MY CO2 (KL) SDN BHD** 201501029820 (1155142-M) | SAMP No. 564  
40, JALAN SEPADU B25/B, 40400 SHAH ALAM, SELANGOR, MALAYSIA.  
Tel: +603 - 5122 3366 Fax: +603 - 5122 3386  
**MY CO2 (JB) SDN BHD** 201501029979 (1155302-A) | SAMP No. 752  
15, JALAN MOLEK 1/8, TAMAN MOLEK, 81100 JOHOR BAHRU, JOHOR.  
Tel: +607 - 355 8811 Fax: +607 - 355 9808  
enquiry@myco2.com.my www.myco2.com.my



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