



Test Report

Date : 2020-08-06
No. : HC20070045

Page 1 of 7

Applicant(Code:001325579): Evangelical Lutheran Church Social Service – Hong Kong
Unit 10 29/F Metropole Square
10 On Yiu Street Shek Mun
Sha Tin NT HK

Description of Sample(s) : One submitted sample said to be Positive Mask.
Country of Origin : Hong Kong

Sample Receiving Condition: In intact original packing under ambient temperature

Date Sample(s) Received : 2020-07-02

Date Tested : 2020-07-08 to 2020-08-04

Investigation Requested : Performance Test as per ASTM F2100

1. Bacterial Filtration Efficiency 細菌過濾效率 (BFE) %
– *Staphylococcus aureus* 金黃色葡萄球菌 (ATCC 6538)
2. Particulate Filtration Efficiency 微粒過濾效率 (PFE) %
3. Differential Pressure 空氣交換壓力差
4. Synthetic Blood Penetration 合成血液穿透性
5. Flammability to Class 1 可燃性

CHUAH Ah Poh, Anne
Authorized Signatory
Chemical and Food Department
For and on behalf of

The Hong Kong Standards and Testing Centre Ltd



In the event of any discrepancy between the English and Chinese versions of the text mentioned before, the English version shall prevail to the extent of such discrepancy only.

The Hong Kong Standards and Testing Centre Limited 香港標準及檢定中心有限公司
10 Dai Wang Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong 香港新界大埔工業邨大宏街10號
Tel: +852 2666 1888 Fax: +852 2664 4353 Email: hkstc@stc.group Website: www.stc.group

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.

For Conditions of Issuance of this test report, please refer to the overleaf and Website.

除非事先得到香港標準及檢定中心有限公司的書面批准，否則不得自行複印此報告。測試報告相關的簽發條款，請參閱背頁和本公司網頁。



Test Report

Date : 2020-08-06
No. : HC20070045

Page 2 of 7

Requirement:

Performance Test as per ASTM F2100-19	Level 1	Level 2	Level 3
Bacterial Filtration Efficiency(BFE) % 細菌過濾效率 – <i>Staphylococcus aureus</i> (ATCC 6538) 金黃色葡萄球菌	≥95%	≥98%	
Particulate Filtration Efficiency (PFE) % 微粒過濾效率	≥95%	≥98%	
Differential Pressure (ΔP) 空氣交換壓力差	<5.0 mmH ₂ O/cm ²	<6.0 mmH ₂ O/cm ²	
Resistance to Penetration by Synthetic Blood Penetration合成血液穿透性	80 mmHg	120 mmHg	160 mmHg
Flame Speed (Flammability to Class 1) 可燃性	Class 1 (The time of flame spread is 3.5 seconds or more)		

Summary:

Performance Test as per ASTM F2100-19	Positive Mask	
	Level 1	Level 2
Bacterial Filtration Efficiency(BFE) % 細菌過濾效率 – <i>Staphylococcus aureus</i> (ATCC 6538) 金黃色葡萄球菌	Pass	Pass
Particulate Filtration Efficiency (PFE) % 微粒過濾效率	Pass	Pass
Differential Pressure (ΔP) 空氣交換壓力差	Pass	Pass
Resistance to Penetration by Synthetic Blood Penetration 合成血液穿透性	Pass	Pass
Flame Speed (Flammability to Class 1) 可燃性	Pass	Pass



Test Report

Date : 2020-08-06
No. : HC20070045

Page 3 of 7

Method(s) Used:

1. ASTM F2100-2019 9.1 & ASTM F2101-2019
2. ASTM F2100-2019 9.3 & ASTM F2299-2017
3. ASTM F2100-2019 9.2 & EN 14683:2019 Annex C
4. ASTM F2100-2019 9.4 & ASTM F1862-2017
5. 16 CFR 1610
6. GB 15979-2002 Appendix B

Test Result(s):

1. Bacterial Filtration Efficiency 細菌過濾效率 (BFE) %
– *Staphylococcus aureus* 金黃色葡萄球菌 (ATCC 6538)

Specimen(s)	Positive Mask
1	99.7%
2	99.7%
3	99.8%
4	99.7%
5	99.7%

Notes : - Control average 對照組的平均菌落數 : 3000 CFU
- Mean particle size 平均粒徑 : 3.2µm
- Testing side 測試面 : Outside of specimen 外側
- Testing area 測試面積 : 47 cm²



Test Report

Date : 2020-08-06
No. : HC20070045

Page 4 of 7

2. Particulate Filtration Efficiency 微粒過濾效率 (PFE) %
(0.1 μ m PSL ; Flow rate : 28.3 Litre/min)

Specimen(s)	Positive Mask
1	>99.9%
2	99.8%
3	>99.9%
4	99.9%
5	99.9%
Average	99.9%

3. Differential Pressure 空氣交換壓力差

Specimen(s)	Positive Mask
1	4.07 mmH ₂ O/cm ²
2	3.48 mmH ₂ O/cm ²
3	3.50 mmH ₂ O/cm ²
4	3.49 mmH ₂ O/cm ²
5	3.24 mmH ₂ O/cm ²
Average	3.56 mmH ₂ O/cm ²

Notes : - 1mmH₂O = 9.8Pa



Test Report

Date : 2020-08-06
No. : HC20070045

Page 5 of 7

4a. Synthetic Blood Penetration 合成血液穿透性 (Pressure : 80mmHg)

Specimen(s)	Positive Mask	Specimen(s)	Positive Mask
1	None Seen無穿透	17	None Seen無穿透
2	None Seen無穿透	18	None Seen無穿透
3	None Seen無穿透	19	None Seen無穿透
4	None Seen無穿透	20	None Seen無穿透
5	None Seen無穿透	21	None Seen無穿透
6	None Seen無穿透	22	None Seen無穿透
7	None Seen無穿透	23	None Seen無穿透
8	None Seen無穿透	24	None Seen無穿透
9	None Seen無穿透	25	None Seen無穿透
10	None Seen無穿透	26	None Seen無穿透
11	None Seen無穿透	27	None Seen無穿透
12	None Seen無穿透	28	None Seen無穿透
13	None Seen無穿透	29	None Seen無穿透
14	None Seen無穿透	30	None Seen無穿透
15	None Seen無穿透	31	None Seen無穿透
16	None Seen無穿透	32	None Seen無穿透
Requirement: An acceptable quality limit of 4.0% is met for a normal single sampling plan when ≥ 29 of 32 test specimens show passing result (none seen)			



Test Report

Date : 2020-08-06
No. : HC20070045

Page 6 of 7

4b. Synthetic Blood Penetration 合成血液穿透性 (Pressure : 120mmHg)

Specimen(s)	Positive Mask	Specimen(s)	Positive Mask
1	None Seen無穿透	17	None Seen無穿透
2	None Seen無穿透	18	None Seen無穿透
3	None Seen無穿透	19	None Seen無穿透
4	None Seen無穿透	20	None Seen無穿透
5	None Seen無穿透	21	None Seen無穿透
6	None Seen無穿透	22	None Seen無穿透
7	None Seen無穿透	23	None Seen無穿透
8	None Seen無穿透	24	None Seen無穿透
9	None Seen無穿透	25	None Seen無穿透
10	None Seen無穿透	26	None Seen無穿透
11	None Seen無穿透	27	None Seen無穿透
12	None Seen無穿透	28	None Seen無穿透
13	None Seen無穿透	29	None Seen無穿透
14	None Seen無穿透	30	None Seen無穿透
15	None Seen無穿透	31	None Seen無穿透
16	None Seen無穿透	32	None Seen無穿透
Requirement: An acceptable quality limit of 4.0% is met for a normal single sampling plan when ≥ 29 of 32 test specimens show passing result (none seen)			

Test Report

Date : 2020-08-06
No. : HC20070045

Page 7 of 7

5. Flammability to Class 1 可燃性

Specimen(s)	Positive Mask	Class
	Time of spread of flame (Original state)	
1	Ignited, but extinguished 可燃點，但可自然熄滅	1
2	Ignited, but extinguished 可燃點，但可自然熄滅	
3	Ignited, but extinguished 可燃點，但可自然熄滅	
4	Ignited, but extinguished 可燃點，但可自然熄滅	
5	Ignited, but extinguished 可燃點，但可自然熄滅	

Photo(s):



***** End of Test Report *****

簽發測試報告的條款

Conditions of Issuance of Test Reports

1. 香港標準及檢定中心有限公司（以下簡稱「本公司」）為提供符合下述條款的測試和報告，而接受有關樣品和貨品。本公司基於下述條款提供服務，下述條款為本公司與申請服務的個人、企業或公司（以下簡稱「客戶」）的協議。
All samples and goods are accepted by The Hong Kong Standards & Testing Centre Limited (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The Company provides its services on the basis that such terms and conditions constitute express agreement between the Company and any person, firm or company requesting its services (the "Clients").
2. 由此測試申請所發出的任何報告（以下簡稱「報告」），本公司會嚴格地為客戶保密。未經本公司書面同意，報告的整體或部分不得複製，也不得用於廣告或非授權的其他用途。然而，客戶可以將本公司印製的報告或認可的副本，向其客戶、供貨商或直接相關的其他人出事或提交。除第3條款規定外，除非相關政府部門、法律或法院要求，否則未經客戶同意，本公司不得就本報告內容向任何第三方討論或披露。
Any report issued by the Company as a result of this application for testing service (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to his customer, supplier or other persons directly concerned. Subject to clause 3, the Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
3. 本公司將有權透露有關測試的文件及/或檔案予任何第三方認證/認可機構作審核或其他相關用途。本公司無須因透露文件及/或檔案的內容負上任何責任。
The Company shall be at liberty to disclose the testing-related documents and/or files anytime to any third-party accreditation and/or recognition bodies for audit or other related purposes. No liabilities whatsoever shall attach to the Company's act of disclosure.
4. 除非相關政府部門、法律或法院要求，否則未經本公司預先書面同意，本公司無需，也並無義務到法院對有關報告作證。
The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
5. 除非由本公司進行抽樣，並已在報告中說明，否則報告內的結果只適用於送測的樣品，不適用於批量。樣品相關信息由客戶提供，本公司不對樣品信息的真實性負責。
The results in Report apply only to the sample as received and do not apply to the bulk, unless the sampling has been carried out by the Company and is stated as such in the Report. The Clients provide the sample's relevant information, and the Company will not be liable for or accept responsibility for the truth of the sample information.
6. 當報告內有作出與規範或標準符合性聲明時，將採用ILAC-G8指導文件（及/或在電工類測試領域時的IEC Guide 115）[不確定度的置信率為95%]作為判定規則。
When a statement of conformity to a specification or standard is provided, the ILAC-G8 Guidance document (and/or IEC Guide 115 in the electrotechnical sector) with 95% coverage probability for the expanded uncertainty will be adopted as a decision rule for the determination of conformity.
7. 如本公司確定報告被不當使用，本公司保留撤回報告的權利，並有權要求其它適當的額外賠償。
In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
8. 本公司接受樣品進行測試的前提是，該測試報告不能作為針對本公司法律行動的依據。
Sample submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
9. 如因使用本公司任何報告內的資料，或任何傳播信息所描述與之有關的測試或研究導致的任何損失或損害，本公司概不負責。
The Company will not be liable for or accept responsibility for any loss or damage howsoever arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
10. 若需要在法院審理程序或者仲裁過程中使用測試報告，客戶必須在提交測試樣品前將該意圖告知本公司。
Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
11. 該測試報告的支持數據和信息本公司只保存4年。個別評審機構有特別要求的，檢測數據和報告的保存期限可依情況變動。一旦超過上述提及的保存期限，數據和信息將被處理掉。任何情況下，本公司不必提供任何被處理的過期數據或信息。即使本公司事先被告知可能會發生相關損害，本公司在任何情況下也不必承擔任何損害，包括（但不限於）補償性賠償、利潤損失、數據損失、或任何形式的特殊損害、附帶損害、間接損害、從屬損害或任何違反約定、違反承諾、侵權（包括疏忽）、產品責任或其他原因產生的懲罰性損害。
Subject to the variable length of retention time for test data and report stored hereinto as to otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of this test report for a period of four years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after the retention period. Under no circumstances shall we be liable for damages of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.
12. 報告的簽發記錄可通過登錄網站www.stc.group查詢。如需進一步查詢報告的有效性或核實報告，需與本公司聯繫。
Issuance records of the Report are available on the internet at www.stc.group. Further enquiry of validity or verification of the Reports should be addressed to the Company.