

**TEST REPORT**

NUMBER : SINT20802780

DATE : 7-Apr-2020

APPLICANT : Honsin Apparel Sdn Bhd (A subsidiary of Prolexus Bhd)  
531, Batu 2 1/2, Jalan Kluang, 83000 Batu Pahat, Johor

ATTN : Dr Harin

Sample Description : Fabric Face Mask ProXmask90  
 Fiber Content : -  
 Color : (A) KS0181 (Black) A1, (B) KS160-1 (Orange) A2, (C) KS0181 (Black) B1, (D) KS160-1 (Orange) B2  
 Purchase Order No. : -  
 Article No. : -  
 Style No. : -  
 Others : -  
 Date Received/Date Test Started : 16 Mar 2020

**TEST CONDUCTED : AS PER THE REQUEST OF THE APPLICANT. FOR FURTHER DETAILS PLEASE REFER TO ENCLOSED PAGE (S)**

**CONCLUSION :**

	(A)	(B)	(C)	(D)
Anti-Bacterial Finishes on Textile Materials	N/A	N/A	#	#
Water Repellency-Spray Test	#	#	N/A	N/A
Bacteria Filtration Efficiency (BFE)				

Note : P = Pass

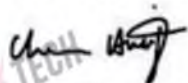
F = Fail

# = No Specified Requirement

\* = No Submitted Information

N/A = Not Applicable

FOR Intertek Testing Services (S) Pte Ltd. [Singapore]



DR. CHEN HUAYI  
ASSISTANT GENERAL MANAGER

**TEST REPORT**

NUMBER : SINT20802780R

DATE : 7 -Apr-2020

TEST CONDUCTED (AS REQUESTED BY THE APPLICANT)

**1. Anti-Bacterial Finishes on Textile Materials**  
(AATCC 100-2012)

(C) Requirement

0 Hour (B)  $1.99 \times 10^5$   
24 Hour (A) <100  
% Reduction (R) >99.95

(D) Requirement

0 Hour (B)  $1.99 \times 10^5$   
24 Hour (A) <100  
% Reduction (R) >99.95

**REMARK:**

S. = STAPHYLOCOCCUS (ATCC 6538)

CFU/SAMPLE = COLONY FORMING UNIT PER SAMPLE.

% REDUCTION (R) =  $100 (C-A)/C$

WHERE: (A) = THE NUMBER OF BACTERIA RECOVERED FROM THE INOCULATED TREATED TEST SPECIMEN SWATCHES IN THE JAR AFTER "24 hr." CONTACT TIME.

(C) = THE NUMBER OF BACTERIA RECOVERED FROM THE INOCULATED UNTREATED CONTROL SWATCHES IN THE JAR AT "0" CONTACT TIME.

**2. Water Repellency-Spray Test**

(AATCC 22-2005 :

(Tested On Face Side Only)

	(A)	(B)	<u>Requirement</u>
As Received	100	100	-

**TEST REPORT**

**3. Bacteria Filtration Efficiency (BFE) Test**

ASTM F2101-19 Standard Test Method for Evaluating the Bacteria Filtration Efficiency (BFE) of Medical Face Mask Materials, Using a Biological Aerosol of Staphylococcus Aureus. Area contacting with the bacteria challenge: inside of the mask

Flow rate: 28.3 ± 0.3 L/min

Mean particle size of the challenge aerosol: 3 µm ± 0.3 µm

Test area: approximately 38.5 cm

**RESULTS**

Sample Description : Fabric Face Mask. Color: Black

After data acquisition on the Anderson Sieve Sampler for 6 stages, the total bacteria filtration efficiency (BFE) is then calculated by the bacterial CFU counts reduction before and after mask installation,

**BFE: 90%**

Meeting ASTM F2101 fabric mask requirement.

## END OF THE TEST REPORT ##

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Focus product:

**HeiQ Viroblock NPJ03****HEIQ**  
**VIROBLOCK**

## Antiviral and antimicrobial protection

Face masks treated with HeiQ Viroblock NPJ03 have proved to be effective against human coronavirus (>99.99% reduction of virus infectivity). A unique combination of vesicle and silver technologies, the HeiQ Viroblock NPJ03 textile treatment is designed to effectively reduce virus and bacteria infectivity on contact.

- Traps and immediately kills viruses and bacteria on contact
- Can be applied to a wide spectrum of textile surfaces, incl. face masks, air filters, medical gowns, curtains, drapes, etc.
- Tested effective against:
  - Coronavirus (229E)
  - Influenza
  - Avian flu
  - Swine flu
  - Respiratory Syncytial Virus (RSV)
- Safe and non-toxic

Coronavirus  
**99.997%**  
reduction

Human influenza A  
**99.9996%**  
reduction

Avian influenza A  
**99.92%**  
reduction

RSV  
**99.92%**  
reduction

# HeiQ Viroblock NPJ03

## Antiviral and antimicrobial protection

### Face mask testing: HeiQ Viroblock NPJ03 provides additional protection

Aerosol challenge testing assessed the potential for viable viruses to pass through face mask material. Masks treated with HeiQ Viroblock NPJ03 showed dramatically improved reduction in virus infectivity compared to untreated control masks. The treatment proved effective against key virus types: H1N1, H5N1, H7N9, 229E (Coronavirus), and RSV.

Study ID	Agent	Log reduction		% reduction	
		Control	HeiQ Viroblock NPJ03	Control	HeiQ Viroblock NPJ03
798-110	H1N1 (Human Influenza A)	3.63	5.38	99.9766%	99.9996%
798-111	H5N1 (Avian Influenza A)	2.86	4.86	99.862%	99.999%
798-112	229E (Human Coronavirus)	2.90	4.48	99.874%	99.997%
798-114	H7N9 (2013 Influenza A virus)	1.93	4.24	98.825%	99.994%
798-115	RSV (Respiratory Syncytial Virus)	1.40	3.10	96.02%	99.92%



[www.heiq.com](http://www.heiq.com)

**SWISS  
TECH  
INSIDE**

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## TEST REPORT

Issued: 08 May 2020

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Intertek Report No. SINH20800410

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Malaysia

Email: harin@tp textile.com

**Subject:** FACE MASK TESTING of the ProXmask

Dear Dr Harin,

This test report for ProXmask represents the results of our evaluation of the below referenced product(s) to the requirements contained in the following standards:

### TEST METHODS AND STANDARDS

Differential Pressure (Air Exchange Pressure) (ASTM F2100 / EN 14683:2019)

Flame Spread (CFR 16 Part 1610)

SAMPLE #	SAMPLE RECEIVED	SERIAL #	COLOR	CONDITION
1	ProXmask	-	Black/Grey	Original

TESTED : 24-Apr-2020

Issued Date : 08-May-2020

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**TEST REPORT****TEST RESULTS****1. Determination of Differential Pressure (Air Exchange Pressure)**

(Test method: ASTM F2100 / EN 14683:2019 (Air exchange pressure))

## Conditions:

Temperature: 22°C

Relative Humidity: 67 %

Air flow rate: 8 L/min

Area of test material = 4.9 cm<sup>2</sup>

## Results:

Differential Pressure in Pascal

Sample no	Area 1	Area 2	Area 3	Area 4	Area 5	Ave differential pressure
1	21.8	21.8	21.8	21.8	21.8	21.8
2	21.8	22.0	22.0	22.0	22.0	22.0
3	21.6	21.8	22.0	22.0	22.0	21.9
4	22.0	21.6	21.8	22.0	22.0	21.9
5	21.8	21.6	21.8	21.6	21.6	21.7
						<b>21.9</b>

**TEST REPORT**

**2. Wearing Apparel Flammability**

(US CPSC 16 CFR Part 1610-2008)

Sample Back (Samples 1 and 2)

Plain Surface      Raised Surface

Burn Direction : <input checked="" type="checkbox"/> Length	Burn Direction : <input checked="" type="checkbox"/> Length
PRELIM PLAIN SURFACE :	PRELIM PLAIN SURFACE :
Length DNI	Length DNI
Width DNI	Width DNI
Original (Seconds)	After One Drycleaning/Laundrying (Seconds)
1. DNI	1. DNI
2. DNI	2. DNI
3. DNI	3. DNI

Classification: Class 1, Normal flammability

Requirement: Class 1

Sample Face (samples 1 & 2)

Plain Surface      Raised Surface

Burn Direction : <input checked="" type="checkbox"/> Length	Burn Direction : <input checked="" type="checkbox"/> Length
PRELIM PLAIN SURFACE :	PRELIM PLAIN SURFACE :
Length DNI	Length DNI
Width DNI	Width DNI
Original (Seconds)	After One Drycleaning/Laundrying (Seconds)
4. DNI	4. DNI
5. DNI	5. DNI
6. DNI	6. DNI

Classification: Class 1, Normal flammability

Requirement: Class 1

Burn code remark:

DNI = Did Not Ignite





Total Quality. Assured.

HONSJIN APPAREL SDN  
Intertek Report: No: SINH20800410

TEST REPORT

Joice Anne Bengzon Pena  
Laboratory Executive

Dr. Chen Huayi  
Assistant General Manager

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End of Test Report



Total Quality. Assured.

**TEST REPORT**

Issued: 07 Jul 2020

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Applicant: Dr Harin, Humaira  
Email: [harin@tptextile.com](mailto:harin@tptextile.com), [humaira@tptextile.com](mailto:humaira@tptextile.com)

**Subject:** Bacterial Filtration Testing of ProXMask-90V

Dear Dr Harin, Ms. Humaira

This test report for *Bacterial Filtration Testing of ProXMask-90V* represents the results of our evaluation of the below referenced product(s) to the requirements contained in the following standards:

**DESCRIPTION OF TEST METHODS AND STANDARDS**

Bacterial Filtration Efficiency (BFE)

SAMPLE #	SAMPLE RECEIVED	SERIAL #	COLOR	CONDITION
1	ProX Mask-90V	-	Black	After 60 Handwash

TESTED: 07-June-2020

Issued Date: 07-July-2020

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## TEST REPORT

TEST RESULTS**1. Bacterial Filtration Efficiency (BFE)**

ASTM F2101-19 - Standard Test Method for Evaluating the Bacterial Filtration Efficiency (BFE) of Medical Standard Materials, Using a Biological Aerosol of Staphylococcus aureus.

Area contacting with the bacterial challenge: Inside of the mask

Bacteria aerosol air flowrate:  $28.3 \pm 0.3$  L/min

Mean particle size of the challenge aerosol:  $3 \mu\text{m} \pm 0.3 \mu\text{m}$

Test area: Approximately  $50 \text{ cm}^2$

Wash Condition: Hand wash at  $30^\circ\text{C}$  with Woolite, Do not Bleach, Line Dry, 60 Washes

Test Sample/ Controls	Stage 1, CFU	Stage 2, CFU	Stage 3, CFU	Stage 4, CFU	Stage 5, CFU	Stage 6, CFU	Sum of Total plate count for the 6 sieves, CFU	Average count for controls, CFU	BFE (%)	Average BFE (%)
-ve Control	0	0	0	0	0	0	0			
+ve Control 1	169	430	752	564	320	124	2359	2612		
+ve Control 2	190	541	839	693	432	169	2864			
Sample 1	3	4	22	80	200	230	539		79.36	80.13
Sample 2	3	3	16	63	201	213	499		80.90	
Sample 3	4	3	24	84	213	191	519		80.13	

Remark:

CFU = Colony Forming Unit

BFE = Bacterial Filtration Efficiency

The above test results relate to the samples after 60 washes. The test results showed the Bacterial Filtration Efficiency for the samples submitted reached 80.13% in average based on 3 trials.



Total Quality. Assured.

HONSIN APPAREL SDN  
BHD  
Intertek Report No: SINH20800466-3

TEST REPORT

Joice Anne Bengzon Pena  
Laboratory Executive

Dr. Chen Huayi  
Assistant General Manager

Remark: Test item 1 was requested by client and subcontracted with reference 7191239370-CHM20-03-RC.

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End of Test Report