

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 x 10⁵
24 Hour (A) <100
% Reduction (R) >99.95

-

(D)

Requirement

0 Hour (B) 1.99 x 10⁵
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	-

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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

RSV
99.92%
reduction

Avian influenza A
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

SWISS
TECH
INSIDE

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Total Quality. Assured.

TEST REPORT

Issued: 08 May 2020

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Intertek Report No. SINH20800410

Ph: (607) 4318 388

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 cm²

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
						21.9

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/Laundering (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)

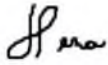
Plain Surface Raised Surface

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/Laundering (Seconds)
4. DNI	4. DNI
5. DNI	5. DNI
6. DNI	6. DNI

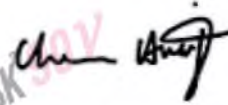
Classification: Class 1, Normal flammability
Requirement: Class 1

Burn code remark:
DNI = Did Not Ignite

TEST REPORT



Joice Anne Bengzon Pena
Laboratory Executive



Dr. Chen Huayi
Assistant General Manager

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End of Test Report

PRO X MASK 90V

PRO X MASK 90V

PRO X MASK 90V

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PRO X MASK 90V

PRO X MASK 90V



Total Quality. Assured.

TEST REPORT

Issued: 08 May 2020

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Intertek Report No. SINH20800409

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Email: harin@tp textile.com

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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

Bacteria Filtration Efficiency (ASTM F2101-19)

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	After 20 Washes

TESTED : 09-Apr-2020

Issued Date : 08-May-2020

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TEST REPORT

TEST RESULTS

1. Bacteria 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 ± 0.3 L/min

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

Test area: Approximately 50 cm²

Sample Description: ProXmask. Color: Black/Grey

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	0		
+ve Control 1	237	598	676	318	173	333	2335	2647		
+ve Control 2	242	543	838	474	282	299	2678			
+ve Control 3	284	571	938	559	331	246	2929			
Sample 1	4	4	30	128	300	292	758		71.36	72.10
Sample 2	3	2	9	90	273	296	673		74.57	
Sample 3	5	6	37	127	319	290	784		70.38	

Notes :

CFU : Colony Forming Unit

BFE : Bacterial Filtration Efficiency

Remark

The test results showed the Bacterial Filtration Efficiency for the samples submitted reached 72.10% in average based on 3 trials.

TEST REPORT

2. 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 cm²

Results:

Differential Pressure in Pascal

Sample no	Area 1	Area 2	Area 3	Area 4	Area 5	Ave differential pressure
1	22.4	22.2	22.4	22.4	22.7	22.4
2	22.7	22.4	22.4	22.7	22.7	22.6
3	22.4	22.4	22.4	22.7	22.4	22.5
4	22.2	22.4	22.4	22.2	22.2	22.3
5	22.4	22.4	22.2	22.2	22.4	22.3
						22.4

TEST REPORT

3. 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/Laundering (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)

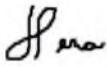
Plain Surface Raised Surface

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/Laundering (Seconds)
4. DNI	4. DNI
5. DNI	5. DNI
6. DNI	6. DNI

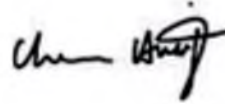
Classification: Class 1, Normal flammability
Requirement: Class 1

Burn code remark:
DNI = Did Not Ignite

TEST REPORT



Joice Anne Bengzon Pena
Laboratory Executive



Dr. Chen Huayi
Assistant General Manager

Disclaimer: Test item 1 was requested by client and subcontracted with reference to 7191236322-CHM20-01-RC

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End of Test Report