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**Laboratory #:** 839244-20  
**Report Date:** July 2, 2020  
**Received Date:** June 29, 2020

**Attention:** Albert Chen  
**Specimen:** #1: Medical Masks

### TEST REPORT

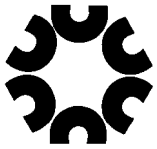
One specimen, consisting of Medical Masks, was submitted to be tested for differential pressure, synthetic blood penetration and flame spread to determine acceptability with level 2 barrier classification under ASTM F2100-19 requirements.

Note: This report ONLY contains results for three of the five requirements as per ASTM F2100-19. Unless all the tests are performed, final overall performance level cannot be achieved for the submitted medical mask.

#### Medical Face Mask Material Requirements

Characteristic	Level 1 Barrier	Level 2 Barrier	Level 3 Barrier	Summary Results
Bacterial Filtration Efficiency, %	≥95	≥98	≥98	Not Performed
Differential Pressure, mm H <sub>2</sub> O/cm <sup>2</sup>	<5.0	<6.0	<6.0	Pass Level 2 or 3
Sub-Micron Particulate Filtration Efficiency at 0.1 micron, %	≥95	≥98	≥98	Not Performed
Synthetic Blood Penetration minimum pressure in mmHg for pass result	80	120	160	Pass Level 2
Flame Spread	Class 1	Class 1	Class 1	Pass any Level
<b>OVERALL PERFORMANCE LEVEL</b>	<b>Incomplete</b>			

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**DIFFERENTIAL PRESSURE**

EN 14683:2019 edition Annex C

Each specimen was conditioned for 4 hours minimum at 21+/-5 C and 85+/-5 % R.H.

Requirements ASTM F2100-19:

Differential Pressure (mmH<sub>2</sub>O/cm<sup>2</sup>)

Level 1 Barrier: <5.0

Level 2 Barrier: <6.0

Level 3 Barrier: <6.0

**RESULTS**

<u>Specimen #</u>	<u>Differential Pressure</u> <u>(mm H<sub>2</sub>O/cm<sup>2</sup>)</u>	<u>Specimen (Pass/Fail)</u>	<u>FINAL RESULT</u>
1-1	5.5	Pass	<b>PASS FOR LEVEL 2 or 3</b>
1-2	5.2	Pass	
1-3	5.2	Pass	
1-4	5.2	Pass	
1-5	5.4	Pass	
Average	5.3		

Mask Surface Area: 25mm diameter (x5 test areas) (4.9 cm<sup>2</sup>)

Air Flow Rate: 8 L/min

Mask Location Specimen taken from: Each specimen from middle of the mask (X 5 specimens).

Note: For a test plan of 5 specimens, no failure is allowed for an Acceptable Quality Limit of 4.0%.



**SYNTHETIC BLOOD PENETRATION**

ASTM F1862/F1862M-17 at 120 mmHg pressure

**RESULTS**

Specimen #	Test Pressure (mmHg)	Total Number of Specimens	Number of Pass Specimens	FINAL RESULT
1	120	32	32	<b>Pass for Level 2</b>

Note: Acceptable Quality Limit of 4.0% is met for single sampling plan when 29 or more of the 32 tested specimens show pass results.

<b>Material construction type</b>	Not provided/unknown
<b>Supplier</b>	Not provided/unknown
<b>Lot number</b>	Not provided/unknown
<b>Date of receipt</b>	June 29, 2020
<b>Date of test</b>	June 30, 2020
<b>Fluid velocity (cm/s)</b>	559
<b>Volume of impact fluid (ml)</b>	2
<b>Angle of pneumatic valve to horizontal</b>	3°
<b>Description target area mask</b>	White Flat Area
<b>Distance from tip cannula to mask (in)</b>	12
<b>Technique to enhance visual detection</b>	Cotton swab used to lightly daub on the surface
<b>Conditioning parameters</b>	21±5°C, 85±5% R.H for minimum of 4 hours



**FLAME SPREAD**

The specimen, consisting of 5 masks, was tested in accordance to 16 CFR 1610 (1-1-16 Edition).

	Specimen #	RESULT	CONCLUSION
Specimen #1	1-1	IBE	<b>Classified as Class 1 PASS for ANY LEVEL</b>
	1-2	IBE	
	1-3	IBE	
	1-4	IBE	
	1-5	IBE	

**IBE:** Ignited but extinguished

**Test:** Flame Resistance 45° angle test. One-Second Flame Impingement.  
**Type of fabric:** Without a raised fiber surface  
**Surface tested:** Face  
**Type of test:** Original State  
**Direction tested:** Length  
**Testing Conditioning:** Specimens conditioned at 105°C for 30 min, then placed in desiccator  
**Requirements:** The flame spread time for textile products without a raised fiber surface must be greater than 3.5 seconds.

Note: For a test plan of 5 specimens, no failure is allowed for an Acceptable Quality Limit of 4.0%.

Note: Original State - Class 1