TEST REPORT

IBR JN: 21012A

Test Date: 2 - 3 April 2020

Test Method: 42 CFR Parts 84.180 Airflow resistance and 84.181 Particle efficiency test methods (Abbreviated)

Sample Description: **Control Group - Face Mask 3M, 1860, N95 (REGULAR)**
Treated Group - Face Mask 3M, 1860S, N95 (SMALL)

Date Received: 1 April, 2020

Fluid: Air
Flow rate: 85 ± 2 lpm
Contaminant: 0.08µm (±15% CV) Latex Microspheres (Neutralized)
Temp (°C) : 21.0 RH (%) : 43.2 BP (mmHg) : 735.0

Sample ID	Group	Airflow Resistance (Pa)	Particle Counts		Particle Efficiency (%)
			Upstream	Downstream	
21012-1	Control	68	210291	7089	**96.63**
21012-2	Control	68	216088	8817	**95.92**
21012-3	Control	74	248087	3056	**98.77**
21012-4	Control	78	218357	4317	**98.02**
21012-5	Control	78	263180	4270	**98.38**
21012-6	Contorl	64	224966	1520	**99.32**
21012-7	Control	78	234729	3242	**98.62**
21012-8	Control	80	228090	2705	**98.81**
21012-9	Control	82	222347	4150	**98.13**
21012-10	Control	82	207988	5366	**97.42**
21021-11	Control	79	232040	2680	**98.85**
21021-12	Control	65	221036	2058	**99.07**
21021-13	Control	64	222451	2376	**98.93**
21021-14	Control	80	208942	5251	**97.49**
21021-15	Control	82	213550	5797	**97.29**
21012-31	20x	102	179597	6817	**96.20**
21012-32	20x	104	218513	7805	**96.43**
21012-33	20x	96	218816	5234	**97.61**
21012-34	20x	100	188760	6343	**96.64**
21012-35	20x	102	220064	4968	**97.74**
21012-36	20x	101	219042	4706	**97.85**
21012-37	20x	98	240110	5040	**97.90**
21012-38	20x	102	229872	6053	**97.37**
21012-39	20x	98	219577	4464	**97.97**
21012-40	20x	100	231648	5413	**97.66**
21012-41	20x	102	212234	5139	**97.58**
21012-42	20x	102	254892	7247	**97.16**
21012-43	20x	108	217025	4113	**98.10**
21012-44	20x	106	198884	4263	**97.86**
21012-45	20x	102	228955	6695	**97.08**

Modifications to the test: Samples were tested as received with no humidity conditioning. A near monodispersed polystyrene latex bead (PSL) was used as the contaminant for determining the particle efficiency of the two lots of samples. There was no loading of the filters.

The two groups of masks were of different sizes. The control group was Style 1860 and the treated group was Style 1860S.

Control

Treated

Notice: These data relate only to the samples tested. This report may be copied only in its entirety.
Performed By: RB Data Location: RB-116

SGS IBR LABORATORIES

TEST REPORT

IBR JN: 21012A

Test Date: 2 - 3 April 2020

Test Method: 42 CFR Parts 84.180 Airflow resistance and 84.181 Particle efficiency test methods (Abbreviated)

Sample Description: **Control Group - Face Mask 3M, 1860, N95 (REGULAR)**
Treated Group - Face Mask 3M, 1860S, N95 (SMALL)

Date Received: 1 April, 2020

Anova: Single Factor - Particle Efficiency - Alpha=0.01

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Control - Style 1860	15	1471.65	98.11	0.96
12 Dose - Style 1860S	15	1461.15	97.41	0.35

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.675	1	3.6750	5.6387	0.0247	7.6356
Within Groups	18.249	28	0.6517			
Total	21.924	29				

Anova: Single Factor - Differential Pressure - Alpha=0.01

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Control - Style 1860	15	1122	74.8	48.6
12 Dose - Style 1860S	15	1523	101.5333333	9.266666667

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	5360.033333	1	5360.033333	185.2546083	7.2197E-14	7.635619
Within Groups	810.1333333	28	28.93333333			
Total	6170.166667	29				

Manufacturer	Model No.	Serial No.	IBR ID	Range of Use	Cal Due
Meriam	50MW20-1-1/2	L-1554-3R8	AF-101	1.5-22 scfm	7/22/2023
Dwyer	475-0-M	E11AD	MAN-61	0.1-10.0 inH2O	6/18/2020
Dwyer	477AV-0	02N2VX	MAN-64	0.1-10.0 inH2O	1/28/2021
Omega	OM-DVTH	421-0417-0051	RH-211	10-90%, 10-50C	1/10/2021
Vaisala	PTU300	R3240750	RH-209	500-1100 hPa	8/9/2020
TSI	3080	70902080	N/A	10-1000nm	6/30/2020
TSI	3772	70907300	N/A	10000 particles/cc	6/30/2020
TSI	3080	70502006	N/A	10-1000nm	7/22/2020
TSI	3772	3772113401	N/A	10000 particles/cc	7/22/2020

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Performed By: RB Data Location: RB-116

Reviewed by: _____

Daniel R. Miller, Air Labs Manager

Revision	Editorial/Technical	Description	Approved by	Release Date
		Initial release	DRM	4/4/2020