

# **Dataset for: Plasma Generated Ozone and Reactive Oxygen Species for Point of Use PPE Decontamination System**

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Paper abstract:

This is a dataset for a paper. This paper reports a plasma reactive oxygen species (ROS) method for decontamination of PPE (N95 respirators and gowns) using a surface DBD source to meet the increased need of PPE due to the COVID-19 pandemic. A system is presented consisting of a mobile trailer (35 m<sup>3</sup>) along with several Dielectric barrier discharge sources installed for generating a plasma ROS level to achieve viral decontamination. The plasma ROS treated respirators were evaluated at the CDC NPPTL, and additional PPE specimens and material functionality testing were performed at Texas A&M. The effects of decontamination on the performance of respirators were tested using a modified version of the NIOSH Standard Test Procedure TEB-APR-STP-0059 to determine particulate filtration efficiency. The treated Prestige Ameritech and BYD brand N95 respirators show filtration efficiencies greater than 95% and maintain their integrity. The overall mechanical and functionality tests for plasma ROS treated PPE show no significant variations.

Keywords: Pandemic COVID-19, PPE, DBD plasma, ozone disinfection, mobile trailer.

Table 1. Replicates number for each material characterization method

	Internal Mechanical Testing	External Strap Tensile Testing	External Filtration Testing	Particulate Filtration Testing	Surface charge	Wettability	Yellowness Index	Hydrostatic Testing	Water Impact Penetration
Replicate Number	3	3	3	3	6	5-6	2/6	3	1

Table 2. Internal Tensile Testing for Polypropylene

Polypropylene			
Condition (ppm-min)	Force at Break [N]		
Control-0	112.5	108	108
Ozone 1-700	131.8	126.4	126.4
Ozone 2-1200	114.6	115.1	115.1
Ozone 3-7000	107.4	116.4	116.4
	Displacement at Break [mm]		
Control-0	18.858	18.533	17.236
Ozone 1-700	15.738	14.559	16.334
Ozone 2-1200	19.681	20.256	17.910
Ozone 3-7000	19.737	19.161	18.795
	Apparent elongation at Break [%]		
Control-0	58.023	57.025	53.034
Ozone 1-700	48.424	44.798	50.259
Ozone 2-1200	60.558	62.326	55.107
Ozone 3-7000	60.728	58.958	57.829
Note: Distance between grips = 32.5 Apparent elongation: (displacement/distance between grips) *100			

Table 3. Internal Tensile Testing for Polyester

Polyester			
Condition (ppm-min)	Force at Break [N]		
Control-0	94.9	104.8	85.9
Ozone 1-700	103.8	95.4	107.2
Ozone 2-1200	85.1	89.2	94.3
Ozone 3-7000	99.3	99.3	105.1
	Displacement at Break [mm]		
Control-0	5.755	6.473	4.416
Ozone 1-700	8.226	7.378	7.384
Ozone 2-1200	4.733	5.573	6.348
Ozone 3-7000	7.086	7.128	6.493
	Apparent elongation at Break [%]		

Control-0	17.707	19.917	13.589
Ozone 1-700	25.312	22.701	22.721
Ozone 2-1200	14.564	17.147	19.531
Ozone 3-7000	21.804	21.934	19.980
Note: Gage length = 25 mm Distance between grips = 32.5 mm Apparent elongation: (displacement/distance between grips) *100			

Table 4. Internal Tensile Testing for Proxima Gown

Proxima Gown			
Condition (ppm-min)	Force at Break [N]		
Control-0	34	31.4	32.8
OZONE 1-1800	30	29.4	30.7
OZONE 2-3700	29.2	31.2	34.8
	Displacement at Break [mm]		
Control-0	24.814	25.813	24.313
OZONE 1-1800	22.808	20.314	21.314
OZONE 2-3700	24.314	23.814	24.314
	Apparent elongation at Break [%]		
Control-0	24.814	25.813	24.313
OZONE 1-1800	22.808	20.314	21.314
OZONE 2-3700	24.314	23.814	24.314
Note: Distance between grips = 100 mm Apparent elongation: (displacement/distance between grips) *100			

Table 5. Internal Tensile Testing for BYD three layers and band

Inner Layer			
Condition (ppm-min)	Force at Break [N]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	24.4	23.3	25.3
Trailer-500	23.3	23.7	23.2
Trailer-1500	24.6	27.3	26.3
Glovebox-500	23.6	23.7	26.9
Glovebox-1500	25.6	26.2	25.1
	Displacement at Break [mm]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	27.929	21.599	29.100
Trailer-500	38.934	35.767	34.600
Trailer-1500	41.600	43.600	44.600
Glovebox-500	23.099	21.433	34.600
Glovebox-1500	30.766	27.933	25.767

	Elongation at break [%]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	85.935	66.460	89.537
Trailer-500	119.796	110.051	106.462
Trailer-1500	128.000	134.154	137.231
Glovebox-500	71.075	65.949	106.462
Glovebox-1500	94.666	85.947	79.282
Middle Layer (Cotton)			
Condition (ppm-min)	Force at Break [N]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	10.2	11.6	11.4
Trailer-500	9.2	9	7.6
Trailer-1500	9.4	9.7	9.4
Glovebox-500	10.6	10.7	10.3
Glovebox-1500	9	8	9.2
	Displacement at Break [mm]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	18.430	20.266	19.766
Trailer-500	20.100	16.600	15.933
Trailer-1500	16.933	16.434	17.767
Glovebox-500	22.933	19.767	18.434
Glovebox-1500	18.434	15.267	17.767
	Elongation at break [%]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	56.706	62.358	60.819
Trailer-500	61.845	51.078	49.025
Trailer-1500	52.103	50.566	54.666
Glovebox-500	70.563	60.820	56.719
Glovebox-1500	56.719	46.975	54.666
Middle Layer (Filter)			
Condition (ppm-min)	Force at Break [N]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	10	8	7.2
Trailer-500	6.7	7.1	6.4
Trailer-1500	5.3	5.7	4.9
Glovebox-500	3.9	4.2	4.8
Glovebox-1500	5.3	5.8	6.1
	Displacement at Break [mm]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	7.763	7.266	8.100
Trailer-500	4.600	5.100	4.434
Trailer-1500	2.934	2.100	1.434
Glovebox-500	1.767	1.600	2.433

Glovebox-1500	2.934	3.933	3.434
	Elongation at break [%]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	23.885	22.357	24.922
Trailer-500	14.154	15.691	13.642
Trailer-1500	9.027	6.461	4.412
Glovebox-500	5.436	4.923	7.485
Glovebox-1500	9.027	12.101	10.565
Outer Layer			
Condition (ppm-min)	Force at Break [N]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	32.6	27.4	30.1
Trailer-500	30.6	32	32
Trailer-1500	32.9	31.4	32.3
Glovebox-500	31.8	30.7	31
Glovebox-1500	31.4	30.5	27.9
	Displacement at Break [mm]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	36.433	33.266	37.767
Trailer-500	39.434	38.600	37.267
Trailer-1500	38.600	42.100	39.933
Glovebox-500	42.266	37.433	37.600
Glovebox-1500	47.432	37.933	26.432
	Elongation at break [%]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	112.102	102.358	116.205
Trailer-500	121.335	118.770	114.666
Trailer-1500	118.770	129.539	122.871
Glovebox-500	130.050	115.180	115.692
Glovebox-1500	145.946	116.718	81.330
Band			
Condition (ppm-min)	Force at Break [N]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	53	49.7	55.1
Trailer-500	48.5	48.2	50
Trailer-1500	52.5	43.1	44.4
Glovebox-500	43.7	43.5	43.1
Glovebox-1500	41.9	50.3	48
	Displacement at Break [mm]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	250.727	202.302	207.602
Trailer-500	196.360	199.910	194.668
Trailer-1500	181.618	206.286	220.169

Glovebox-500	186.077	177.302	177.511
Glovebox-1500	171.219	164.419	154.044
	Elongation at break [%]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	385.734	311.234	319.388
Trailer-500	302.093	307.554	299.489
Trailer-1500	279.413	317.363	338.721
Glovebox-500	286.272	272.772	273.093
Glovebox-1500	263.413	252.952	236.990
Note: Gage length = 20 mm (layers) or = 25 mm(band) Distance between grips = 32.5 mm (layer) or =65 mm (band) Apparent elongation: (displacement/distance between grips) *100			

Table 6. Internal Tensile Testing for Prestige Ameritech Gown

Prestige Ameritech Gown			
Condition (ppm-min)	Force at Break [N]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	19.3	20.3	20.3
Trailer-500	16.6	15.5	19.1
Trailer-1500	15	15.7	11.9
Glovebox-500	14.5	15.5	13.8
Glovebox-1500	13.9	14	13
	Displacement at Break [mm]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	35.312	37.314	41.814
Trailer-500	72.814	76.314	47.313
Trailer-1500	36.814	65.813	36.314
Glovebox-500	65.313	71.314	50.314
Glovebox-1500	57.814	55.313	47.814
	Apparent elongation at Break [%]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	35.312	37.314	41.814
Trailer-500	72.814	76.314	47.313
Trailer-1500	36.814	65.813	36.314
Glovebox-500	65.313	71.314	50.314
Glovebox-1500	57.814	55.313	47.814
Note: Distance between grips = 100 mm Apparent elongation: (displacement/distance between grips) *100			

Table 7. Internal Tensile Testing for Prestige Ameritech Mask

Inner Layer			
Condition (ppm-min)	Force at Break [N]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	13.2	13.3	12.9
Trailer-500	10	10.8	11.2
Trailer-1500	14.7	13.2	13.4
Glovebox-500	9.9	11.3	8.6
Glovebox-1500	12.2	9.1	11.5
Displacement at Break [mm]			
	Replicate-1		
	Replicate-1	Replicate-2	Replicate-3
Control-0	14.433	14.100	14.767
Trailer-500	9.434	11.267	12.599
Trailer-1500	17.267	12.267	16.266
Glovebox-500	13.434	12.767	6.766
Glovebox-1500	15.267	8.767	10.101
Elongation at break [%]			
	Replicate-1		
	Replicate-1	Replicate-2	Replicate-3
Control-0	44.408	43.383	45.435
Trailer-500	29.026	34.667	38.766
Trailer-1500	53.129	37.744	50.050
Glovebox-500	41.334	39.282	20.819
Glovebox-1500	46.975	26.975	31.079
Middle Layer			
Condition (ppm-min)	Force at Break [N]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	10.3	10.3	10.5
Trailer-500	10.9	10.1	11.1
Trailer-1500	10.7	11.4	10.1
Glovebox-500	11.3	10.8	11.6
Glovebox-1500	11.6	10.8	11.5
Displacement at Break [mm]			
	Replicate-1		
	Replicate-1	Replicate-2	Replicate-3
Control-0	4.100	4.933	4.933
Trailer-500	4.600	4.266	4.266
Trailer-1500	4.600	4.767	4.434
Glovebox-500	5.600	4.434	6.100
Glovebox-1500	6.100	3.933	6.100
Elongation at break [%]			
	Replicate-1		
	Replicate-1	Replicate-2	Replicate-3
Control-0	12.616	15.179	15.180
Trailer-500	14.154	13.127	13.126

Trailer-1500	14.154	14.666	13.642
Glovebox-500	17.231	13.642	18.769
Glovebox-1500	18.770	12.102	18.770
Outer Layer			
Condition (ppm-min)	Force at Break [N]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	19.9	21.1	20.4
Trailer-500	16.4	17.4	23.6
Trailer-1500	16.4	17.4	23.6
Glovebox-500	19.1	18.8	22.5
Glovebox-1500	19.8	21.5	22.3
	Displacement at Break [mm]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	27.099	31.600	34.600
Trailer-500	31.266	35.600	26.767
Trailer-1500	20.099	20.600	41.601
Glovebox-500	29.267	25.933	34.100
Glovebox-1500	31.266	27.766	31.266
	Elongation at break [%]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	83.382	97.230	106.462
Trailer-500	96.202	109.539	82.359
Trailer-1500	61.844	63.386	128.003
Glovebox-500	90.051	79.794	104.922
Glovebox-1500	96.202	85.434	96.203
Band			
Condition (ppm-min)	Force at Break [N]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	35	34.4	36.5
Trailer-500	33.9	35.6	35
Trailer-1500	33	41.3	35.8
Glovebox-500	42.1	39.9	31.2
Glovebox-1500	35.7	37.7	33.8
	Displacement at Break [mm]		
	Replicate-1	Replicate-2	Replicate-3
Control-0	111.048	103.189	93.758
Trailer-500	100.109	111.203	103.923
Trailer-1500	105.678	118.679	99.693
Glovebox-500	124.074	106.919	100.523
Glovebox-1500	96.988	98.844	106.669
	Elongation at break [%]		
Control-0	341.686	317.503	288.486
Trailer-500	308.027	342.164	319.763



Trailer-1500	325.162	365.166	306.748
Glovebox-500	381.766	328.980	309.302
Glovebox-1500	298.426	304.135	328.212
Note: Distance between grips = 32.5 mm Apparent elongation: (displacement/distance between grips) *100			

Table 8. Yellowness Index Testing for Polypropylene

Yellowness Index - Polypropylene						
Frontside				Backside		
Condition (ppm-min)	Control-0	700	1200	Control-0	700	1200
Replicates						
1	1.520	1.643	1.763	2.193	3.309	2.436
2	2.303	2.605	0.670	2.738	3.193	3.054

Table 9. Yellowness Index Testing for Polyester

Yellowness Index - Polyester						
Frontside				Backside		
Condition (ppm-min)	Control-0	700	1200	Control-0	700	1200
Replicates						
1	1.801	2.302	2.269	3.220	2.700	2.339
2	2.225	2.416	1.812	3.253	3.177	2.853

Table 10. Yellowness Index Testing for 3M N95 Respirator

Yellowness Index – 3M N95 Respirator						
Inside				Outside		
Condition (ppm-min)	Control-0	1800	3300	Control-0	1800	3300
Replicates						
1	6.039	5.341	4.422	11.912	18.351	15.301
2	5.159	6.944	4.140	12.922	17.838	15.459

Table 11. Yellowness Index Testing for BYD DE2322

Yellowness Index – BYD DE2322					
Inside Surface					
Condition (ppm-min)	Control-0	Trailer-500	Trailer-1500	Glovebox-1500	Glovebox-1500
Replicates					
1	2.560	2.767	5.236	1.351	2.153
2	3.132	4.263	5.943	1.952	2.940
3	4.230	5.410	5.957	2.336	3.089

4	2.822	4.075	5.152	1.943	2.389
5	4.517	5.639	5.388	2.559	3.235
6	5.959	5.221	5.616	3.726	3.042
7	2.456	3.865	5.238	1.016	2.426
8	2.646	5.411	5.641	1.949	3.576
9	3.028	6.407	6.010	2.052	3.872
10	2.478	4.861	5.506	1.876	2.655
11	3.769	5.773	6.022	2.697	3.540
12	4.640	6.171	6.632	4.126	3.868
Outside Surface					
Condition (ppm-min)	Control-0	Trailer-500	Trailer-1500	Glovebox-1500	Glovebox-1500
Replicates					
1	-54.264	-50.280	-57.076	-56.158	-50.151
2	-52.150	-52.661	-49.205	-50.936	-57.864
3	-54.470	-52.542	-51.181	-57.282	-53.626
4	-53.347	-54.783	-48.363	-52.465	-55.927
5	-50.296	-55.673	-50.924	-56.478	-55.246
6	-52.391	-50.059	-54.069	-55.133	-54.632
7	-53.738	-53.595	-55.845	-50.664	-55.606
8	-53.367	-50.613	-51.756	-49.568	-54.684
9	-52.320	-50.112	-46.724	-50.991	-51.470
10	-55.921	-48.951	-50.292	-54.955	-53.869
11	-51.088	-53.155	-58.572	-52.556	-55.649
12	-53.081	-48.762	-51.985	-54.881	-48.720
Strap					
Condition (ppm-min)	Control-0	Trailer-500	Trailer-1500	Glovebox-1500	Glovebox-1500
Replicates					
1	3.991	6.679	5.250	7.131	3.675
2	8.575	5.654	7.080	9.223	6.875
3	6.590	8.212	4.885	5.555	7.212
4	6.302	3.830	0.232	6.269	2.642
5	-0.560	4.123	4.649	6.271	4.424
6	4.521	9.995	5.967	-3.186	-4.582
7	8.948	7.302	8.429	4.462	1.794
8	8.972	4.519	6.380	3.840	1.067
9	6.837	6.220	6.100	5.738	6.044
10	8.646	6.229	4.731	7.391	4.135
11	8.040	10.626	1.634	2.879	3.923
12	3.941	8.279	4.252	3.655	-2.368

Table 12. Yellowness Index Testing for Prestige Ameritech Respirator

Yellowness Index - Prestige Ameritech Respirator					
Inside Surface					
Condition (ppm-min)	Control-0	Trailer-500	Trailer-1500	Glovebox-1500	Glovebox-1500
Replicates					
1	4.081	4.363	4.061	3.489	4.249
2	4.147	3.958	4.690	3.373	4.241
3	4.217	3.707	4.443	3.371	3.923
4	4.000	3.923	4.260	4.331	3.927
5	3.554	3.993	4.211	4.112	3.916
6	3.665	4.096	4.455	4.115	3.291
7	3.533	3.945	4.124	1.520	4.088
8	3.814	3.256	4.109	2.565	4.116
9	4.030	3.394	4.293	3.900	3.978
10	3.399	3.889	4.106	2.275	3.977
11	3.153	3.386	3.630	3.997	3.853
12	2.680	4.215	4.328	4.004	2.798
Outside Surface					
Condition (ppm-min)	Control-0	Trailer-500	Trailer-1500	Glovebox-1500	Glovebox-1500
Replicates					
1	2.931	5.202	2.719	3.867	2.732
2	3.175	4.257	1.397	3.458	3.131
3	2.491	4.030	2.203	3.577	3.650
4	4.001	5.684	5.172	4.330	4.288
5	3.561	4.472	4.710	3.543	4.023
6	3.235	4.016	4.065	3.586	3.679
7	2.694	4.208	1.950	2.469	2.708
8	2.933	3.756	2.298	2.546	2.670
9	1.613	3.220	1.622	2.796	2.462
10	3.616	4.315	4.236	3.912	4.571
11	3.695	3.412	4.009	4.015	3.641
12	3.777	3.620	3.340	3.360	3.204
Strap					
Condition (ppm-min)	Control-0	Trailer-500	Trailer-1500	Glovebox-1500	Glovebox-1500
Replicates					
1	10.177	8.138	8.842	7.085	7.989
2	9.037	8.175	9.208	7.173	8.304
3	8.454	8.347	9.627	8.080	8.869
4	9.194	9.012	10.310	8.198	8.880
5	10.206	8.077	10.105	10.237	9.043
6	11.683	8.080	11.428	9.713	10.128
7	8.724	7.290	7.751	6.512	7.479

8	8.838	7.729	8.078	6.619	8.039
9	8.675	6.541	8.151	6.790	8.134
10	8.660	7.469	8.428	8.219	8.441
11	10.681	7.698	8.835	8.867	8.724
12	12.354	7.057	9.908	9.185	8.827

Table 13. Yellowness Index Testing for Prestige Ameritech Gown

Yellowness Index - Prestige Ameritech Gown					
Condition (ppm-min)	Control-0	Trailer-500	Trailer-1500	Glovebox-1500	Glovebox-1500
Replicates					
1	1.650	0.870	1.233	1.458	2.157
2	1.717	1.063	1.302	1.686	2.049
3	1.168	0.961	0.979	1.548	1.629
4	1.393	1.361	2.276	0.930	1.729
5	1.558	1.260	1.725	0.918	2.016
6	2.012	1.181	1.231	1.599	1.723
7	1.532	0.229	1.293	1.584	2.150
8	1.714	0.453	1.426	1.606	1.830
9	1.446	0.758	0.673	1.497	1.522
10	1.444	0.765	1.240	1.828	1.698
11	1.379	1.058	1.510	1.484	1.494
12	1.697	0.735	1.254	1.875	1.656

Table 14. Surface Wettability Testing for Proxima Gown

Surface Wettability/Water Contact Angle [°]						
Condition (ppm-min)	Frontside			Backside		
	Control-0	1800	3700	Control-0	1800	3700
Sample#						
1	150.5	143.979	148.716	143.929	140.75	126.167
2	143.826	148.78	127.742	148.169	142.324	137.544
3	143.26	148.081	136.221	137.385	151.832	N/A
4	144.477	149.14	151.791	143.919	139.992	119.512
5	144.287	149.096	138.304	143.956	140.054	115.095
6	136.348	148.56	150.188	143.566	N/A	127.688

Table 15. Surface Wettability Testing for Polyester

Surface Wettability/Water Contact Angle [°]								
	Frontside				Backside			
Condition (ppm-min)	Control-0	1200	3700	7000	Control-0	1800	3700	7000
Replicate								
1	128.792	121.155	102.291	117.455	130.131	120.256	109.156	111.13
2	125.353	118.889	101.145	118.13	132.851	116.628	113.76	107.06
3	129.028	128.284	116.051	115.458	132.826	106.8	107.397	106.188
4	129.605	114.724	108.356	113.388	129.692	113.731	106.197	105.031
5	123.799	119.157	104.757	111.911	129.453	114.564	106.13	107.094
6	125.195	115.728	105.08	118.993	126.96	112.314	113.184	103.187

Table 16. Surface Wettability Testing for Polypropylene

Surface Wettability/Water Contact Angle [°]								
	Frontside				Backside			
Condition (ppm-min)	Control-0	1200	3700	7000	Control-0	1800	3700	7000
Replicate								
1	118.441	116.988	106.892	100.838	128.984	118.313	119.289	113.447
2	118.441	115.219	104.297	100.098	126.967	123.069	122.261	110.237
3	117.182	115.491	109.157	104.381	128.009	121.986	117.6	111.982
4	117.978	115.777	111.457	102.818	126.86	127.137	117.447	109.286
5	116.616	118.426	110.254	98.593	127.931	123.267	117.233	110.034

Table 17. Water Impact Penetration Testing for Proxima Gown and Prestige Ameritech Gown

	Proxima Gown			Prestige Ameritech Gown				
Condition (ppm-min)	Control-0	1800	3700	Control-0	Trailer-500	Trailer-1500	Glovebox-500	Glovebox-500
Water Gain (g)	0.05	0.06	0.08	0.01	0.01	0.01	0.01	0.01

Table 18. Surface Charge Measurement for Polypropylene

Surface Charge Measurement [mm]				
	Before charging			
Condition (ppm-min)	Control-0	700	1200	7000
Replicate				
1	3.175	19.844	21.431	14.288
2	5.556	22.225	27.781	12.7
3	3.969	19.844	21.431	7.938

4	5.556	31.75	26.988	23.019
5	6.35	24.606	26.194	20.638
6	11.113	23.8125	20.638	20.638
Immediately after charging				
1	27.781	39.688	31.75	28.575
2	26.988	27.781	37.306	28.575
3	23.812	36.512	30.163	25.4
4	26.194	38.898	26.988	29.369
5	25.796	42.069	23.812	32.544
6	28.575	31.75	27.781	33.338
15 Days after charging				
1	6.35	2.381	4.763	N/A
2	7.938	1.588	7.938	N/A
3	4.763	3.175	N/A	3.175
4	11.113	N/A	N/A	3.175
5	8.731	1.588	N/A	N/A
6	4.763	3.175	7.938	7.938

Table 19. Particulate Filtration Testing for Prestige Ameritech Respirator

Prestige Ameritech Respirator			
Condition (ppm-min)	Initial Filter Resistance (mmH <sub>2</sub> O)		
	Replicate-1	Replicate-2	Replicate-3
Control-0	7.600	7.400	7.800
Ozone 500	7.500	7.600	7.700
Ozone 1500	7.700	7.400	7.700
	Particulate filtration Efficiency (%)		
	Replicate-1	Replicate-2	Replicate-3
Control-0	99.340	97.790	98.620
Ozone 500	99.520	99.560	99.350
Ozone 1500	99.590	99.530	99.500

Table 20. Particulate Filtration Testing for BYD DE2322

BYD DE2322			
Condition (ppm-min)	Initial Filter Resistance (mmH <sub>2</sub> O)		
	Replicate-1	Replicate-2	Replicate-3
Control-0	14.000	13.000	14.700
Ozone 500	10.800	13.500	14.400
Ozone 1500	15.400	13.300	14.100
	Particulate filtration Efficiency (%)		
	Replicate-1	Replicate-2	Replicate-3
Control-0	97.630	98.470	98.250

Ozone 500	97.790	98.040	97.790
Ozone 1500	98.690	97.100	97.760

Table 21. Strap Tensile Testing for Prestige Ameritech Respirator

Prestige Ameritech Respirator			
Condition (ppm-min)	Force in Top Strap (N)		
	Replicate-1	Replicate-2	Replicate-3
Control-0	2.574	2.663	2.514
Ozone 500	2.553	2.693	2.832
Ozone 1500	2.687	2.600	2.599
Force in Bottom Strap (N)			
	Replicate-1	Replicate-2	Replicate-3
Control-0	3.010	2.798	2.937
Ozone 500	2.876	2.966	3.234
Ozone 1500	3.079	3.026	2.853

Table 22. Strap Tensile Testing for BYD DE2322

BYD DE2322			
Condition (ppm-min)	Force in Top Strap (N)		
	Replicate-1	Replicate-2	Replicate-3
Control-0	4.564	4.501	4.666
Ozone 500	4.721	4.686	4.800
Ozone 1500	4.915	5.015	5.087
Force in Bottom Strap (N)			
	Replicate-1	Replicate-2	Replicate-3
Control-0	4.628	4.736	5.005
Ozone 500	4.506	4.387	4.795
Ozone 1500	4.492	4.485	4.693