

Result Table on Comparative Test of Disposable Masks

Sample Code	Labelling, packaging and price							BFE (Bacterial Filtration Efficiency) (%) [7]			PFE (Particle Filtration Efficiency) (%) [8]			Breathability (Differential Pressure)[9]		Synthetic Blood Penetration [10]		Bioburden (CFU/g) [11]		Breaking Strength of Mask Harness (N) [12]					Overall Rating [13]				
	Brand and Model / Product Descriptions [1]	Dimension of Mask [2]	Number of Masks per Pack [3]	Approximate Retail Price [4]		Claimed Place of Origin [2]	Mask Standard(s) Claimed [5]	Labelling and User Instructions [6]	Claim	Test Result			Claim	Test Result			Test Result	Pressure Applied (mm Hg)	Test Result		Test Result		Test Result						
				Per Pack	Per Mask					Average	Range	Rating		Average	Range	Rating			Range (mm H ₂ O/cm ²)	Rating	Number of Masks Penetrated	Rating	CFU/g	Rating		Specimen 1	Specimen 2	Specimen 3	Specimen 4
Models claiming to meet ASTM F2100 Level 1 standard																													
1	AMAG Premium Quality 3 Layers Medical Masks	175 x 95 mm	50	\$109	\$2.2	Hong Kong	ASTM F2100-2019 Level 1	●●●●	≥95%	99.8	99.7-99.9	●●●●●	≥95%	98.48	98.16-98.75	●●●●●	4.4-4.7	●●●●	80	0	●●●●●	11.9	●●●●●	13	13	17	18	●●●●●	●●●●●
2	肯納絲外科耳掛式口罩 Canuxi Surgical Mask with Ear Loop	17.5 x 9.5 cm	50	\$138	\$2.8	Hong Kong	ASTM F2100-19 Level 1	●●●●	≥99%	99.6	99.6	●●●●●	≥99%	99.04	98.84-99.26	●●●●●	3.4-3.8	●●●●●	80	0	●●●●●	28.5	●●●●	13	11	11	10	●●●●●	●●●●●
3	麥迪康耳掛式醫用口罩 Medicom SAFE + MASK Premier Procedure Earloop Face Mask (REF: PMRHMB2115)	175 x 89 mm	40	\$150	\$3.8	China	ASTM F2100 Level 1	●●●●	≥95%	99.1	98.9-99.3	●●●●●	≥95%	97.59	97.16-97.96	●●●●	3.6-3.8	●●●●●	80	0	●●●●●	< 2.5	●●●●●	14	11	11	10	●●●●●	●●●●●
4	LCM Disposable Face Mask (Ref# LCM201)	175 x 95 mm	30	\$120	\$4.0	Hong Kong	ASTM F2100-19 Level 1 EN 14683 Type I	●●●●	≥95%	97.5	97.3-97.8	●●●●●	≥95%	98.85	98.67-99.08	●●●●●	3.2-3.6	●●●●●	80	0	●●●●●	< 2.4	●●●●●	17	15	16	14	●●●●●	●●●●●
5	V Care Mask 專業掛耳式三層口罩 V Care Mask Professional Face Mask Ear-loop 3 ply	-	50	\$148	\$3.0	Hong Kong	ASTM F2100 Level 1	●●●●●	≥95%	99.9	99.9	●●●●●	≥95%	98.59	98.19-98.81	●●●●●	3.6-4.0	●●●●	80	0	●●●●●	7.6	●●●●●	8	8	16	11	●●●●	●●●●●
6	Artec Med Premium Earloop Face Mask	175 x 95 mm	50	\$170	\$3.4	Hong Kong	ASTM F2100-19 Level 1	●●●●●	≥95%	99.8	99.7-99.9	●●●●●	≥95%	98.70	98.44-99.00	●●●●●	3.2-4.0	●●●●●	80	0	●●●●●	41.7	●●●	15	16	13	10	●●●●●	●●●●●
7	Acti Pro三層防護口罩 Acti Pro 3 Ply Protection Face Mask	17.5 x 9.5 cm	30	\$65	\$2.2	Hong Kong	ASTM F2100 Level 1	●●●●●	≥98%	99.7	99.7-99.8	●●●●●	≥98%	98.17	98.06-98.49	●●●●●	3.9-4.2	●●●●	80	0	●●●●●	< 4.4	●●●●●	9	10	8	13	●●●●	●●●●●
8	7 Eleven 三層防護口罩 7 Eleven 3-ply Protection Face Mask	175 x 95 mm	10	\$39	\$3.9	Hong Kong	ASTM F2100 Level 1	●●●●	≥95%	99.8	99.8-99.9	●●●●●	≥95%	98.79	98.49-99.12	●●●●●	4.5-4.8	●●●●	80	0	●●●●●	5.0	●●●●●	6	6	6	6	●●	●●●●●
9	Fresh Disposable Medical Mask	175 x 95 mm	50	\$170	\$3.4	Taiwan	ASTM Level 1	●●●●●	≥99%	99.2	98.8-99.4	●●●●●	≥95%	97.04	96.31-97.85	●●●●●	2.4-2.9	●●●●●	80	0	●●●●●	< 3.0	●●●●●	9	8	9	9	●●	●●●●●
10	愛的家一次性醫用口罩 (S99) - 高級防護版成人用 Family Mask Disposable Medical Face Mask - Premium Edition	17.2 x 9.5 cm	50	\$109	\$2.2	Hong Kong	Listed on the product website: EN14683 Type IIR, ASTM Level I	●●●●	99%	99.8	99.7-99.9	●●●●●	99%	98.29	98.08-98.41	●●●●●	3.9-4.2	●●●●	120	1	●●●●●	9.7	●●●●●	6	6	6	6	●●	●●●●●
11	匯愛 CareHK Face Mask for Adults CHK001AH	17.5 x 9.5 cm	50	\$109	\$2.2	Hong Kong	ASTM F2100-19 Level 1	●●●●●	≥95%	99.4	99.3-99.6	●●●●●	≥95%	96.88	96.67-97.32	●●●●	5.0-5.4	●●●	80	0	●●●●●	9.0	●●●●●	12	12	13	10	●●●●●	●●●●●
12	Pure Living耳掛式醫用口罩 Pure Living Procedure Earloop Face Mask	-	50	\$99	\$2.0	Hong Kong	ASTM F2100 Level 1	●	>95%	99.0	98.9-99.1	●●●●●	>95%	95.21	93.92-96.16	●●●●	2.2-2.4	●●●●●	80	1	●●●●●	47.7	●●	16	18	11	12	●●●●●	●●●●●
Models claiming to meet ASTM F2100 Level 2 standard																													
13	萬保德 MaxProtect Disposable Medical Mask 3-ply with Ear Loop (PB99)	175 x 95 mm	30	\$99	\$3.3	Hong Kong	ASTM F2100 Level 2	●●●●	99%	99.9	99.8-99.9	●●●●●	99%	98.72	98.37-98.88	●●●●●	3.6-4.0	●●●●●	120	0	●●●●●	12.5	●●●●●	12	10	12	10	●●●●●	●●●●●
14	盾牌一次性耳掛式醫用衛生口罩 (M40) 成人裝 Body Shielder Disposable Surgical Earloop Face Mask	175 x 90 mm	50	\$168	\$3.4	China	ASTM F2100-19 Level 2 EN 14683:2014	●●	≥99%	99.9	99.8-99.9	●●●●●	≥99%	98.69	98.28-99.08	●●●●●	3.6-4.1	●●●●	120	0	●●●●●	< 9.7	●●●●●	10	10	11	14	●●●●●	●●●●●
15	萬寧三層防護口罩 Mannings 3 Ply Protection Face Mask	17.5 x 9.5 cm	50	\$113	\$2.3	Hong Kong	ASTM F2100 Level 2	●●●●●	≥99%	99.8	99.7-99.8	●●●●●	≥99%	98.94	98.80-99.16	●●●●●	3.7-4.0	●●●●	120	0	●●●●●	< 7.4	●●●●●	8	10	8	8	●●●	●●●●●
16	HKTvmall 3層外科口罩 HKTvmall 3-Ply Surgical Mask (HK-AD001)	175 x 95 mm	10	\$100	-	Hong Kong	Listed on the product website: ASTM Level 2	●●●●●	≥98%	99.3	99.2-99.5	●●●●●	≥98%	98.13	98.04-98.18	●●●●●	4.2-4.9	●●●●	120 80	25 2	●●●	< 6.8	●●●●●	6	7	7	8	●●	●●●●●
17	Perfetta Disposable High Filtration Face Mask	175 x 95 mm	50	\$98	\$2.0	Vietnam	ASTM F2100-11 Level II EN 14683:2014 Type II	●	99%	96.2	95.8-96.5	●●●●	99%	86.64	84.42-87.64	●	4.9-5.2	●●●●	120	0	●●●●●	< 5.3	●●●●●	8	8	6	11	●●	●●●
Models claiming to meet ASTM F2100 Level 3 standard																													
18	理的外科手術口罩-大碼 Ultra Ready Surgical Filter Mask (L)	17.5 x 9 cm	50	\$200	\$4.0	Hong Kong	ASTM F2100-11 Level 3 EN 14683 Type IIR	●●●●●	≥99%	99.8	99.7-99.8	●●●●●	≥99%	97.46	95.35-99.05	●●●●●	2.5-2.8	●●●●●	160	2	●●●●●	4.9	●●●●●	12	10	10	10	●●●●●	●●●●●
19	屈臣氏3層醫用口罩 Watsons 3-Ply Medical Face Mask	175 x 95 mm	30	\$120	\$4.0	Hong Kong	ASTM Level 3	●●●●	≥98%	99.6	99.6-99.7	●●●●●	≥98%	98.82	98.28-99.08	●●●●●	3.0-3.9	●●●●●	160 120 80	11 5 0	●●●	3.5	●●●●●	16	14	12	15	●●●●●	●●●●●
Models only claiming to meet EU EN 14683 Type II standard																													
20	Tempo醫用衛生口罩-成人 (大碼) Tempo Protect Hygiene Face Mask - Adults (L)	17.5 x 9.5 cm	50	\$175	\$3.5	Taiwan	EN 14683 Type II	●●●●	≥99%	98.4	98.1-98.6	●●●●●	≥99%	96.82	96.15-97.32	●●●●	1.9-2.3	●●●●●	80	0	●●●●●	< 6.4	●●●●●	8	6	6	7	●●	●●●●●
Models only claiming to meet EU EN 14683 Type IIR standard																													
21	便利妥 3D 一次性成人護理口罩 - 大碼 Banitore 3D Disposable Medical Mask (Adult) - L size HXCL010R	18.4 x 16.6 cm	20	\$85	\$4.3	Hong Kong	EN 14683:2019 Type IIR	●●●●	≥98%	99.9	99.9	●●●●●	≥95%	98.51	98.07-98.94	●●●●●	3.1-3.7	●●●●●	120 80	6 0	●●●●	4.2	●●●●●	20	18	18	20	●●●●●	●●●●●
Models only claiming to meet China National Standard GB/T 32610-2016																													
22	Bethres Protective Disposable Mask 3-PLY + Earloops (Item no: 901-A50-B)	17.5 x 9.5 cm	50	\$99	\$2.0	China	GB/T 32610-2016	●●●●	≥95%	99.9	99.9	●●●●●	≥95%	99.38	99.11-99.53	●●●●●	4.6-5.2	●●●●	80	0	●●●●●	28.3	●●●●	12	14	18	17	●●●●●	●●●●●
Models only claiming to meet China National Standard GB 2626-2006 KN90																													
23	保為康國標過濾式防塵口罩 (型號:9600) Powecom	-	10	\$90	\$9.0	China	GB 2626-2006	●●	-	99.9	99.9	●●●●●	≥90%	99.24	99.11-99.39	●●●●●	4.2-4.5	●●●●	80	27	●	> 159.4	●	17	14	12	16	●●●●●	●●●
Models only claiming to meet Taiwan standard																													
24	萊潔醫療防護口罩 Laitest Medical Face Mask	-	50	\$150	\$3.0	Taiwan	CNS 14774	●●●●	>99%	99.9	99.9	●●●●●	>95%	98.13	96.28-99.24	●●●●●	4.7-5.2	●●●●	80	2	●●●●	< 4.9	●●●●●	8	10	10	10	●●●	●●●●●
Models with no clearly indicated face mask standard																													
25	EG 3-Ply Surgical Mask - Regular Size (Model No. MK-3E)	170 x 90 mm	50	\$98	\$2.0	China	-	●●●●	>99%	99.9	99.8-99.9	●●●●●	>96%	99.08	99.04-99.10	●●●●●	2.7-2.9	●●●●●	80	0	●●●●●	5.5	●●●●●	14	16	14	18	●●●●●	●●●●●
26	Protector Face Mask	17.5 x 9.5 cm	30	\$119	-	China	-	●●●●	≥98%	99.8	99.7-99.8	●●●●●	≥98%	99.79	99.72-99.88	●●●●●	3.9-4.7	●●●●	80	0	●●●●●	4.5	●●●●●	12	11	10	14	●●●●●	●●●●●
27	詩樂氏三層過濾口罩(一次性) Swashes 3-Layers Disposable Face Mask	17 x 9.5 cm	30	\$120	\$4.0	China	-	●●●●	≥95%	99.9	99.8-99.9	●●●●●	≥95%	99.37	99.34-99.41	●●●●●	3.1-3.4	●●●●●	80	0	●●●●●	21.1	●●●●	12	13	13	15	●●●●●	●●●●●
28	Topvalu一次性無紡布口罩(男士用) Non-Woven Mask	165 x 95 mm	10	\$30	\$3.0	China	-	●●●●	-	99.6	99.6-99.7	●●●●●	99.8%	99.47	99.40-99.52	●●●●●	2.6-2.8	●●●●●	80	1	●●●●●	< 2.3	●●●●●	10	12	18	16	●●●●●	●●●●●
29	E+Plus Hygiene Face Mask	-	50	\$150	\$3.0	Hong Kong	Meets international standards	●	≥99%	99.8	99.8	●●●●●	≥95%	99.31	99.21-99.36	●●●●●	3.1-3.5	●●●●●	80	0	●●●●●	1.6	●●●●●	17	18	19	17	●●●●●	●●●●●
30	Shield+ Face Mask for Adults	17.5 x 9.3 cm	20	\$50	\$2.5	Hong Kong	-	●●	≥95%	99.9	99.9	●●●●●	≥95%	98.42	98.21-98.55	●●●●●	3.3-4.0	●●●●●	80	0	●●●●●	19.0	●●●●	10	10	9	9	●●●	●●●●●

Note: [1] Models in each category are sorted by overall rating from highest to lowest. A higher number of ● stands for a higher rating. [2] The dimension of the mask and place of origin are either noted from the labelling on the samples or are provided by the distributor to the Council. "-" denotes "Not indicated". [3] Each face mask of models #3, #9, #14, #19, #21, #26 and #27 is individually packaged. [4] The approximate retail price is based on the price at which the Council purchased the samples in July to August 2020. Amongst these, the samples of the 2 models "HKTvmall" (#16) and "Protector" (#26) were purchased by the Council as a bundle with other products. As a result, it is not able to calculate the average retail price per mask. [5] The claimed standards of models #10 and #16 listed in the table are noted from the information on the products' website. Claimed standards from other models are noted from either the labelling or instruction manuals of the samples. [6] Assessment scope includes the expiry date, storage conditions, wearing instructions, etc. [7] The claims about BFE are either values noted from the samples' labelling or the lower limit of the standards they claim. "-" denotes "Not indicated". [8] The claims about PFE are either values noted from the samples' labelling or the lower limit of the standards they claim. The setting used in the PFE setting in this round of test is different from that in 2017. In this round of test, the test area of the mask material is smaller and the flow rate of the particles is higher. Besides, it is noted that a higher flow rate of particles might give a lower PFE test result according to some studies. Nevertheless, it is important to note that both the settings used in this round of test and that used in 2017 are within the ranges required by the ASTM standard test method. Samples with an average PFE lower than 95% are rated as unsatisfactory. [9] The lower the differential pressure is deemed to be the better the breathability. For models which claim to comply with ASTM F2100-19 Level 2 and level 3, a result of > 6.0 is rated as unsatisfactory. For models which claim to comply with ASTM F2100-11 Level 2 and level 3, a result of > 5.0 is rated as unsatisfactory. If the version is not clearly stated, it is deemed to be the version of 2019. [10] The pressure applied varied according to the models' claimed standard. Models which claim to comply with ASTM F2100 Level 3 were tested with 160 mm Hg; those which claim to comply with ASTM F2100 Level 2 or EN 14683 Type IIR were tested with 120 mm Hg; other models were tested with 80 mm Hg. 32 specimens were tested, if more than 3 specimens were penetrated, another 32 specimens would be tested with a pressure of one level lower. Models which had more than 3 specimens penetrated by synthetic blood at 80 mm Hg would be rated unsatisfactory. [11] For each model, 5 specimens were tested. A result of CFU/g ≥ 30 would be rated unsatisfactory. [12] For each model, 4 specimens were tested. 2 specimens (specimens 1 and 2) were not specially conditioned, the other 2 specimens (specimens 3 and 4) were conditioned at specific temperatures. Details can be found in the text. Models with a harness in any of the specimens broken at a tension lower than 10N would be rated unsatisfactory. [13] The weight of each criteria in the overall rating: BFE (35%), PFE (25%), breathability (10%), synthetic blood penetration (15%), bioburden (5%), breaking strength of mask harness (5%), and labelling and user instructions (5%). If a model has unsatisfactory performance in tests, its overall rating will be restricted.