

**Bhabha Atomic Research Centre
Radiological Physics and Advisory Division**

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Testing of face masks developed by Venture Center (incubator of CSIR-NCL)

Aerosol capture efficiency of the face mask material has been measured following ASTM F2299/F2299M-03 standard test method (sampling flow: 1 CFM). The test aerosols used were atomized NaCl aerosols (0.2 % w/v) and the measurements were conducted in optical size range (>0.3 μm). Pressure drop of specimens was estimated at face flow of 8 Lmin^{-1} in accordance with IS 16289 testing method. Results of the tests have been tabulated below:

Table 1: Aerosol (intrinsic) capture efficiency and pressure drop of face mask material (cut sample)

Sr no.	Sample type	Aerosol capture Efficiency for given particle size (%) <i>ASTM F2299/F2299M-03</i>				Pressure drop (mm H ₂ O) <i>IS 16289</i>
		0.3 μm	0.5 μm	1.0 μm	Total (>0.3 μm)	
1.	MH Variant 9 (n=4)	95.23 \pm 2.65	99.90 \pm 10.99	100.00 \pm 44.27	96.27 \pm 2.81	38-40
2.	MH Variant 10 (n=4)	98.11 \pm 3.51	99.90 \pm 5.01	100.00 \pm 38.55	98.57 \pm 3.56	48-50
3.	MH Variant 11 (n=4)	99.13 \pm 3.56	99.98 \pm 4.18	100.00 \pm 38.72	99.36 \pm 3.67	54-56

Table 2: Aerosol capture efficiency of full face mask in sealed fixture

Sr no.	Sample type	Aerosol capture Efficiency for given particle size (%) <i>ASTM F2299/F2299M-03</i>			
		0.3 μm	0.5 μm	1.0 μm	Total (>0.3 μm)
1.	MH Variant 9 (n=3)	95.21 \pm 2.20	96.83 \pm 4.59	99.39 \pm 51.37	95.44 \pm 2.27
2.	MH Variant 10 (n=3)	95.88 \pm 3.60	97.57 \pm 7.55	98.03 \pm 54.13	96.13 \pm 3.81
3.	MH Variant 11 (n=3)	96.63 \pm 3.00	97.69 \pm 4.22	99.96 \pm 52.69	96.77 \pm 3.02

Observations:

1. Larger uncertainty for 1.0 μm size is due to lower concentration of test particles generated by the atomizer in this size range.
2. Pressure drop for all variants was between 38-56 mm H₂O.

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(Note: These results should not be used/quoted as 'Certification of the filter')