

Assessment of Non-NIOSH Approved Innovative FFRs

Organization: Narwall Mask LLC

Date Tested: 1.26.2021

Respirator Model(s): Filter disks tested from Narwall Mask (size S/M and Narwall Mask size L/XL)

Tests: Filtration efficiency with NaCl (modified version of STP-0059)

Innovation: Overhead snorkel with custom filter media

This test result is for a filtering facepiece mask not approved by NIOSH or by any other international standards (e.g., China-KN95, Korea KFN94, UK FFP2 & FFP3, Australia P2, P3, Japan DS/DL2 & DS/DL3). The test conducted for this report is for filtration efficiency and is not equivalent to the test for NIOSH respirator certification per NIOSH test procedure STP-0059.

This assessment provides the filtration performance of an innovative respirator using a modified version of NIOSH test procedure STP-0059. This assessment does not include an evaluation of the fit of these respirators. Use of these innovative respirators in occupational settings would be contingent upon approval by the appropriate regulatory agency.

Filtration Efficiency Results: The minimum and maximum filter efficiencies were 82.8% and 85.2%, respectively. All five respirators measured efficiencies less than 95%. See Table 1.



Figure 1: Narwall Mask LLC front (left image), side (middle image) and interior (right image) views. The filter is shown in the red circle and was removed for filtration testing.



Figure 2. Laboratory Test Photo (TSI, Inc. 8130 filter tester). Due to the design of this respirator, the filter housing was removed from the device and tested for filtration.

Table 1. Filter Efficiency Evaluation

Respirator Model	Sample #	Flow Rate (Lpm)	Initial Filter Resistance (mmH ₂ O)	Initial Percent Leakage (%) (1 min)	Final Percent Leakage (%) (5 min)	Percent Leakage Variance (%)	Maximum Percent Leakage (%)	Filter Efficiency (%)
Narwall Mask Min Fil Eff: 82.8 Max Fil Eff: 85.2	1	85	23.1	8.10	15.9	-7.80	15.9	84.1
	2	85	21.1	7.85	17.2	-9.35	17.2	82.8
	3	85	18.0	7.10	16.2	-9.10	16.2	83.8
	4	85	25.0	7.74	14.9	-7.16	14.9	85.1
	5	85	22.7	6.53	14.8	-8.27	14.8	85.2

Notes:

- The test method utilized in this assessment is not the NIOSH standard test procedure that is used for certification of respirators. Respirators assessed to this modified test plan do not necessarily meet the requirements of STP-0059, and therefore cannot be considered equivalent to N95 respirators that were tested to STP-0059.
- **BOLD** filter efficiencies < 95%.