



N95 respirator fit test.

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This form is to be used with the 3M FT-30 Qualitative Fit Test Apparatus (Bitter) according to the manufacturer's instructions using Denatonium Benzoate as a bitter mist source. The form seeks to document proper training on donning and using N95 respirators. Laboratory personnel should be informed that they will be exposed to a Denatonium Benzoate mist which is not toxic, and a chemical substance commonly used to keep children from ingesting consumer products.

Preparations

- 1) Assemble hood and collar and tighten drawstring.
- 2) Pour 4 ml of the Sensitivity Test Solution #1 into the nebulizer labelled “**#1 Sensitivity Test Solution**”.
- 3) Pour 4 ml of the Fit Test Solution #1 into the nebulizer labelled “**#1 Fit Test Solution**”.

Sensitivity Test

- 1) Place hood and collar over subject without wearing a respirator with face 6 inches from nebulizer vent hole.
- 2) Instruct subject to breathe through his open mouth with tongue extended.
- 3) Administer 10 full nebulizer squeezes of the **#1 Sensitivity Test Solution** through nebulizer vent hole.
- 4) Note down number of squeezes required for subject to taste the bitter solution. If above 30 squeezes are needed, subject must be regarded bitter insensitive and assessed using sweet solution.
- 5) If bitter taste detected, remove hood and ventilate allowing 5 minutes for subject to recover from bitter taste, mouth wash with water might be required.
- 6) Proceed to fit test.





Fit Test

- 1) Ask subject to don respirator as usual or as trained to do so along with any other applicable personal protective gear commonly used (goggles, etc.).
- 2) Instruct subject to don fit test hood and to carry out all the following tests with open mouth and extended tongue.
- 3) **NORMAL BREATHING TEST:** Administer at least 10 full nebulizer squeezes of the **#2 Fit Test Solution** through nebulizer vent hole or half the required amount (if greater than 10) as noted on sensitivity test for 1 MINUTE while the test subject breathes **normally** with open mouth and extended tongue. Administer half the number of the required nebulisations noted in sensitivity test after 30 seconds to maintain bitter solution concentration. Test should last at least 1 minute.
- 4) **DEEP BREATHING TEST:** Administer at least 10 full nebulizer squeezes of the **#2 Fit Test Solution** through nebulizer vent hole or half the required amount (if greater than 10) as noted on sensitivity test for 1 MINUTE while the test subject takes **slow deep breaths** with open mouth and extended tongue. Administer half the number of the required nebulisations noted in sensitivity test after 30 seconds to maintain bitter solution concentration. Test should last at least 1 minute.
- 5) **HEAD TURNING TEST:** Administer at least 10 full nebulizer squeezes of the **#2 Fit Test Solution** through nebulizer vent hole or half the required amount (if greater than 10) as noted on sensitivity test for 1 MINUTE while the test subject **turns head slowly from left to right** breathing while at both turn extremes with open mouth and extended tongue. Administer half the number of the required nebulisations noted in sensitivity test after 30 seconds to maintain bitter solution concentration. Test should last at least 1 minute.
- 6) **HEAD NODDING TEST:** Administer at least 10 full nebulizer squeezes of the **#2 Fit Test Solution** through nebulizer vent hole or half the required amount (if greater than 10) as noted on sensitivity test for 1 MINUTE while the test subject **nods head slowly up and down** breathing while at both nodding extremes with open mouth and extended tongue. Administer half the number of the required nebulisations noted in sensitivity test after 30 seconds to maintain bitter solution concentration. Test should last at least 1 minute.
- 7) **TALKING TEST:** Administer at least 10 full nebulizer squeezes of the **#2 Fit Test Solution** through nebulizer vent hole or half the required amount (if greater than 10) as noted on sensitivity test for 1 MINUTE while the test subject **talks or recites a text passage loudly as to be heard**. Administer half the number of the required nebulisations noted in sensitivity test after 30 seconds to maintain bitter solution concentration. Test should last at least 1 minute.
- 8) **BENDING OVER TEST:** Administer at least 10 full nebulizer squeezes of the **#2 Fit Test Solution** through nebulizer vent hole or half the required amount (if greater than 10) as noted on sensitivity test for 1 MINUTE while the test subject **bends over or bends knees**, breathing after each repetition. Administer half the number of the required nebulisations noted in sensitivity test after 30 seconds to maintain bitter solution concentration. Test should last at least 1 minute.





References

- 1) 3M[®] FT-30. Qualitative Fit Test Apparatus (Bitter) instruction manual <https://multimedia.3m.com/mws/media/1464265O/3m-qualitative-fit-test-apparatus-ft-30-user-instruction.pdf>.
- 2) Implementing fit testing for N95 filtering facepiece respirators: Practical information from a large cohort of hospital workers. E. McMahon, K. Wada, A. Dufresne. Am J Infect Control. 2008 May; 36(4): 298–300. Published online 2008 Apr 30. [doi: 10.1016/j.ajic.2007.10.014](https://doi.org/10.1016/j.ajic.2007.10.014).

Revision history

- 1.0 Original document.
- 2.0 Added references and document format changes.

