3M™ Cool Flow™ Valve

Cool comfort starts with cool breathing

The proprietary 3M™ Cool Flow™ valve is designed to release your hot, humid exhaled breath quickly, helping to prevent an unpleasant build up of heat inside the facepiece - a significant cause of discomfort to respirator wearers.

The Cool Flow valve's efficiency in keeping breathing cool and comfortable has been demonstrated through testing*: the atmosphere inside a respirator with a Cool Flow valve is on average 7.5°F cooler than the similar product without the valve.

This makes Cool Flow valved respirators ideal for long periods of wear, especially where conditions are hot, humid or physically demanding.

To learn more and see the Cool Flow valve in action, visit 3M.com/CoolFlow.

Thermographic images (above):
top: 3M™ Particulate Respirator 8510, N95, unvalved;
bottom: 3M™ Particulate Respirator 8511, N95, with the Cool Flow valve.

* Testing conducted in a 3M laboratory. Testing protocol, data generation and conclusions were reviewed and approved by an expert from The University of Minnesota. The testing performed by 3M is not a part of the testing and certification conducted by NIOSH.

DISTRIBUTED BY:

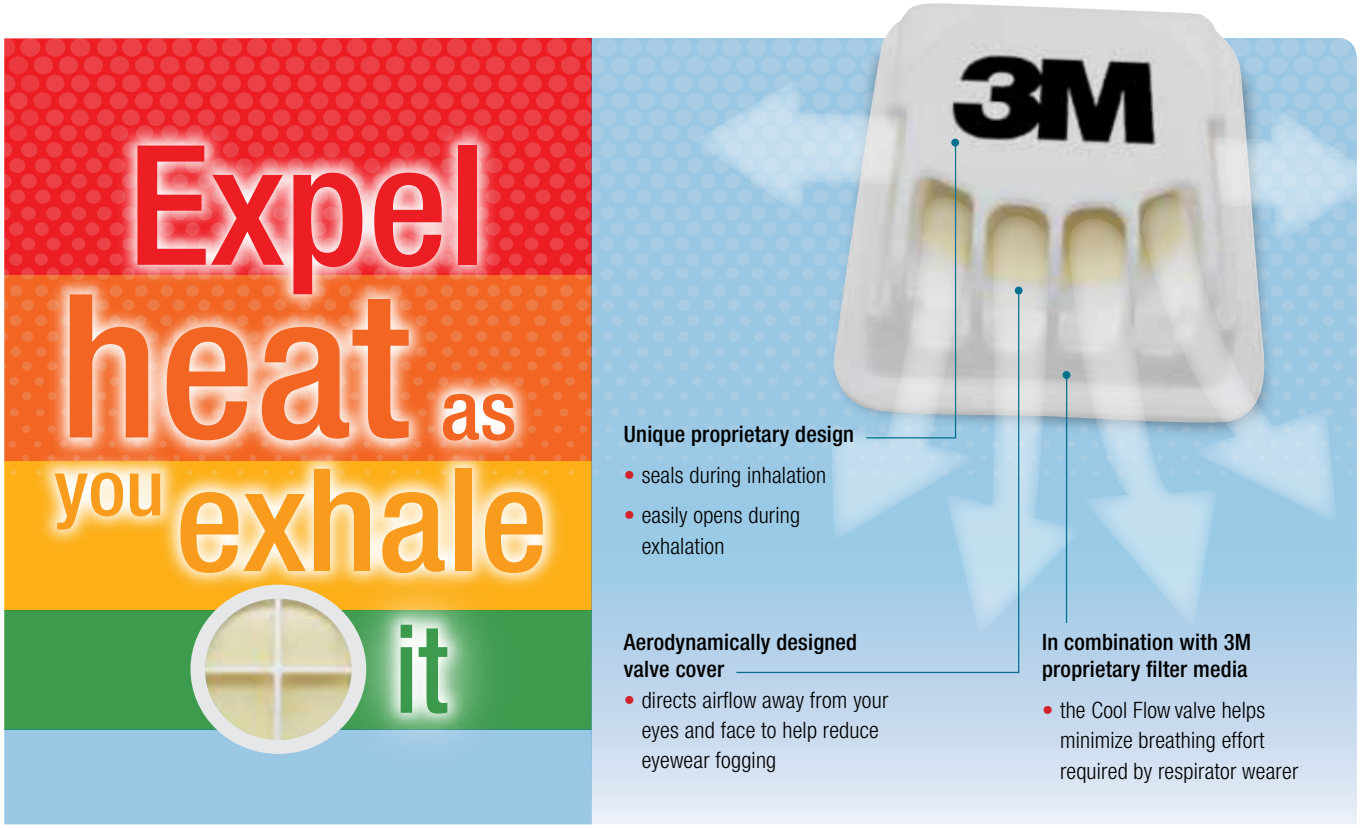
A.E. BLAKE SALES
LES VENTES A.E. BLAKE

For more information please contact us:
In Montreal at 1-800-879-5748
In Toronto at 1-888-664-2643
www.aeblake.ca

3M

Cool comfort
starts with cool breathing

The proprietary 3M™ Cool Flow™ Valve



Putting the hot air about respirators to the test

3M develops respirators with your comfort in mind. But it doesn't stop there.

Until now the only way for wearers or specifiers to determine how hot a respirator feels on the face (one of the key aspects of wearer comfort) has been to buy and wear it.

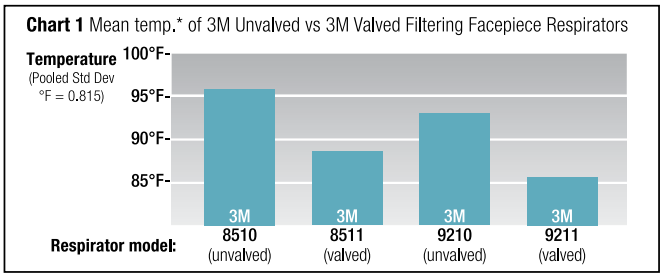
By devising a test that can accurately capture temperature data, 3M is now enabling you to make a quick, educated choice ahead of purchase. This test measures the temperature inside the respirator to simulate user experience.

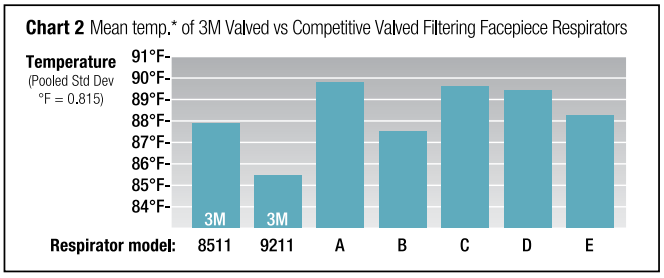
The test, developed internally by 3M, is performed using a breathing machine.

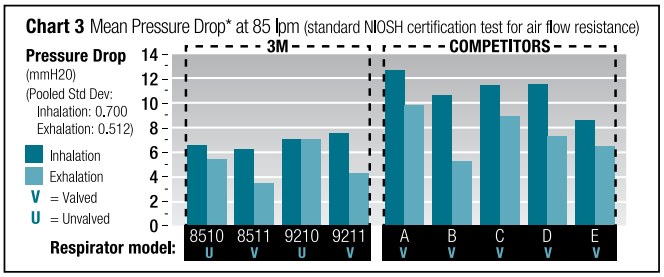
With sophisticated sensors, it tracks the temperature in the space between a respirator and a mannequin head specifically adapted to mimic human breathing (by supplying humidified warm air similar to exhaled breath in temperature and humidity).

The test protocol, data generation, and conclusions were reviewed and approved by an expert from the University of Minnesota.

Inside the respirator: stay cooler with a 3M™ Cool Flow™ valve







* Individual 95% CI for Mean, Based on Pooled Std Dev; Flowrate at 85 liters per minute.

** Statistically different per two sample T-Test and 95% Confidence Interval (both use pooled standard deviation).

Testing protocol, data generation and conclusions were reviewed and approved by an expert from The University of Minnesota. The testing performed by 3M is not a part of the testing and certification conducted by NIOSH.

Chart 1: Results of tests for temperature inside 3M valved and unvalved respirators.

- On average, the respirators with the Cool Flow valve were 7.5°F cooler inside the facepiece than the similar model without a valve**.

Chart 2: The internal temperature test results of Cool Flow valved respirators and competitive valved respirators.

- The 3M™ Particulate Respirator 9211, N95, was cooler than all respirators tested**.
- The 3M™ Particulate Respirator 8511, N95, and two competitive respirators (B and E) were similar in the internal temperature measured, but warmer than the 9211**.
- Competitive respirators A, C and D were the warmest inside the facepiece**.

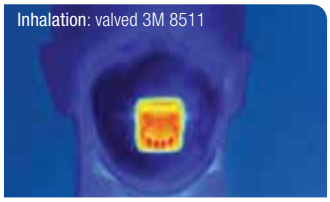
Chart 3: Measurements of pressure drop (breathing resistance) at 85 lpm.

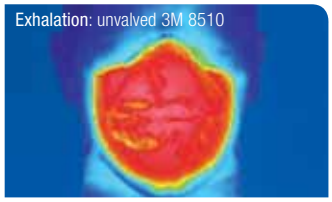
The lower the breathing resistance, the easier it is for the user to inhale and exhale, which should contribute to greater comfort.

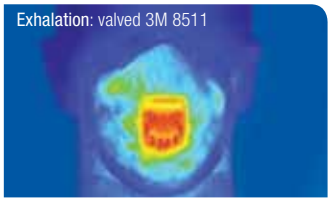
- 3M respirators (8510, 8511, 9210 and 9211) showed lower inhalation air flow resistance than that of competitive products A, B, C and D**.
- 3M valved respirators had lower exhalation air flow resistance than all of the competitive products**.
- The unvalved 3M products (3M™ Particulate Respirator 8510, N95 and 3M™ Particulate Respirator 9210, N95) had lower exhalation breathing resistance than competitive valved products A and C**.

Visible from outside: the comfort difference with 3M™ Cool Flow™ valve

The colors in the thermal images below show the change in surface temperature of the respirators as the model inhales and exhales. Cool < > Hot







Inhalation is the cooler part of the cycle; with both valved and unvalved respirators, the 3M filter media facilitates an easy draw of cooler external air.

As the wearer inhales, air is pulled through the respirator and surface temperature decreases. The valve's plastic cover, because of the material composition, retains some of the heat.

Exhalation: As the wearer exhales the respirator is filled with warm, moist air. The cooler thermal imaging shades of the picture on the right indicate how the respirator fitted with the Cool Flow valve expels the breath, together with its natural heat, more rapidly. As the hot exhaled air exits through the valve, the rest of the respirator remains cooler and more comfortable.

This benefit is ideal for long periods of wear, especially where conditions are hot and humid or when work is physically demanding and likely to cause heavy breathing.

Cool comfort
starts with cool breathing

The 3M™ Cool Flow™ valve is only available on 3M respirators

Standard N95

8210V N95 | 8211 N95 | 8511 N95 | 9211 N95

100 Class

8233 P100 | 8293 P100

Speciality

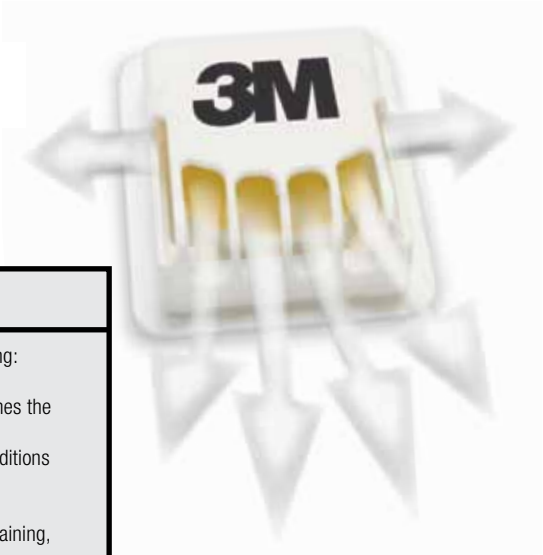
8271 P95 | 8516 N95

Welding N95

8515 N95 | 8212 N95 | 8214 N95 | 8512 N95 | 8514 N95

8576 P95 | 8577 P95

3M has a wide range of NIOSH 42 CFR 84 approved filtering facepiece respirators, both unvalved and valved.



IMPORTANT

All 3M Filtering Facepieces are NIOSH approved respirators. Before using, you must determine the following:

1. The types of contaminants for which the respirator is being selected and exposure time.
2. The concentration level of the contaminant(s). Do not use for particle concentrations that exceed 10 times the OSHA PEL or applicable occupational exposure limit, whichever is lower.
3. Whether the respirator can be properly fitted to the wearer's face. Do not use with beards, or other conditions that prevent a good seal between the face and the sealing surface of the respirator.
4. Before required use of filtering facepiece respirators, a written respiratory protection program must be implemented, meeting all the requirements of OSHA 29 CFR 1910.134 including medical evaluation, training, and fit testing.

⚠ WARNING

These respirators help reduce exposures to certain airborne particulates. Before use, the wearer must read and understand the User Instructions provided as a part of the product packaging. A written respiratory protection program must be implemented meeting all the requirements of OSHA 1910.134 including training, fit testing and medical evaluation. In Canada, CSA standards Z94.4 requirements must be met and/or requirements of the applicable jurisdiction, as appropriate. **Misuse may result in sickness or death.** For proper use, see package instructions, supervisor, or call 3M OH&ESD Technical Service in USA at 1-800-243-4630 and in Canada at 1-800-267-4414.

3M

Occupational Health and Environmental Safety Division

For more information:

Technical Assistance in Canada 1-800-267-4414

Please recycle. Printed in USA.
70-0715-7437-3