

Airborne Hazards.

Finding the right protection...



3M™ Aura™ 9322A+
Particulate Respirator



3M™ 8322
Particulate Respirator



3M™ Aura™ 9312A+
Particulate Respirator



3M™ 8312
Particulate Respirator



3M™ 9422+
Particulate Respirator



3M™ 8710
Particulate Respirator



3M™ 8822
Particulate Respirator



3M™ 8514
Particulate Respirator



Brick Dust

Brick dust and ash contains very fine particles of silica which can be breathed deep into the lungs and scar the delicate tissue (silicosis); exposure may also increase the risk of lung cancer.



Cement Dust

Some cement processes can also release very small particles of silica which can be breathed deep into the lungs and scar the delicate tissue (silicosis); exposure may also increase the risk of lung cancer.



Wood Dust

Exposure can cause occupational asthma in some individuals as inhalation of wood dust particles may initiate an allergic reaction causing them to become more sensitive in the future. Dusts from hardwoods may also cause cancers of the nose.



Lead

Dust and fumes inhaled from industrial processes involving lead or lead compounds may be absorbed and circulate in your blood. Lead can be excreted but it can also be stored by the body. If the amount of lead in your body is too high, it can cause symptoms such as headaches and nausea. If uncontrolled, long term exposure can damage vital organs.



Silica

Very small particles of silica dust, called respirable crystalline silica, can be breathed in and may reach deep into the lungs where it can scar the delicate tissue (silicosis) resulting in difficulties breathing. Long-term exposure to crystalline silica may also increase the risk of lung cancer.



Flour Dust

Inhalation of dust particles from flour can cause bronchitis and irritation to the nose and airways. In some people, exposure may cause occupational asthma, wheezing or serious breathing difficulties.



Welding

Inhalation of some metal oxides found in welding fumes can lead to metal fume fever - the symptoms are short term but include coughing, headaches and fever. Exposure to certain nickel and chromium compounds found in some welding fumes may increase the risk of lung cancer.

Our technology.



In 1969 3M invented the disposable respirator. We were also involved in the development, trial and authentication of qualitative fit testing protocols for respirators.

Since then, we have developed numerous proprietary technologies that have been incorporated throughout our comprehensive range of disposable respirators.

Workers need respirators that fit well, are comfortable and provide the best protection. Employers want quality products from a supplier they can trust. Our wide range of respirators helps to deliver easier breathing and comfortable protection against particles and certain gases and vapours. All our disposable respirators are compatible with eyewear and hearing protection products from 3M.

All 3M respirators meet the performance requirements of Australian/New Zealand Standard AS/NZS 1716:2012 'Respiratory protective devices'.

Advantages of 3M™ Disposable Respirators



3M™ Cool Flow Valve

An efficient exhalation valve minimises heat and moisture build up, particularly in hot and humid work conditions.



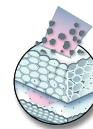
3M™ High Performance Filter Media

High Performance Filter Media combines the benefits of traditional mechanical filtration with advanced technology filtration to capture particles.



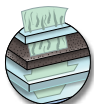
3M™ Foldable Three-Panel Design

This design offers improved comfort, fit and communication – plus the convenience of a foldable respirator. (9300A+ series)



3M™ Clog-Resistant Welding Respirators

Particles are trapped throughout the lofty outer layer and then by the inner filter. This prolongs respirator life while maintaining ease of breathing.



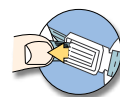
Activated Carbon

Layers of carbon in 3M™ Welding and 3M™ Specialty Respirators are designed to offer relief from the irritation of low levels of specific gases and vapours.



Importance of Fit

3M provides a variety of respirators for customers to select one that fits best on their own face. Fit testing is used to confirm adequate fit and level of protection in the work place.



Adjustment Buckle Straps

Simply pull on the 3M™ Universal Buckle to achieve the optimal comfort and security.



Confidence in Numbers

3M has a rich 100-plus-year history of research and innovation, over 40 in respiratory protection alone, and a passion for designing safe, comfortable respirators. The first Saccharin and Bitrex™ qualitative fit test methods were invented by 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 4.2°C 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 www.3m.com.au/CoolFlow or www.3m.co.nz/CoolFlow.

* 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.



Expel heat as you exhale it

Unique proprietary design

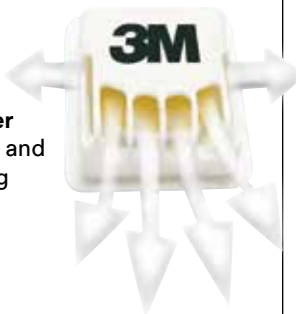
- Seals during inhalation
- Easily opens during exhalation

Aerodynamically designed valve cover

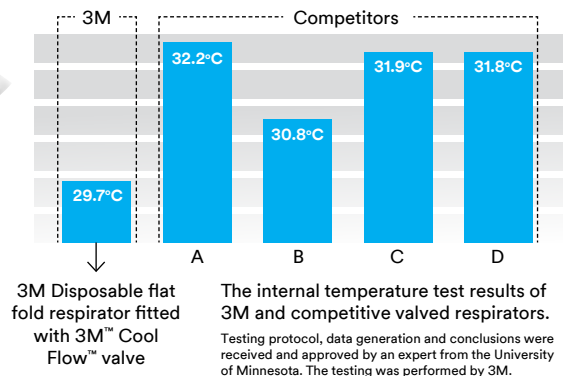
- Directs airflow away from your eyes and face to help reduce eyewear fogging

In combination with 3M proprietary filter media

- The Cool Flow valve helps minimise breathing effort required by respirator wearer

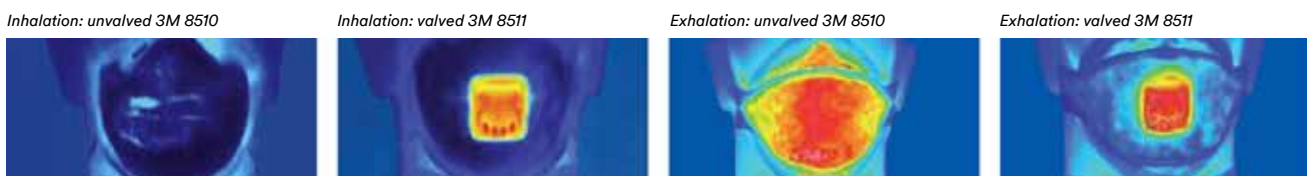


Inside the respirator: Stay cooler with 3M™ Cool Flow™ Valve



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.



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.

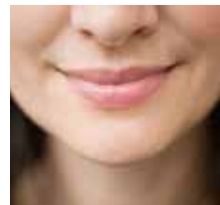
The importance of comfort.

To make sure that the respirator protects you, it must be worn during periods of exposure. Make sure that you choose a respirator that you can wear comfortably for your entire shift.



Face and head comfort

The respirator's edge should be flexible and the shape and size should cover the nose, mouth and chin without causing excessive pressure. A headband material which provides a good, even tension across the head can ensure a comfortable, secure fit for a range of head sizes.



Skin comfort

Skin comfort will be affected by the smoothness and softness of the inner material in contact with the skin - especially over a long period of time. A soft inner face seal and sweat absorbent nose foam will provide greater comfort. Rough or hard materials, coupled with a high temperature inside the respirator may be itchy and unpleasant.



Coolness

An efficient exhalation valve minimises heat build up, particularly in hot and humid work conditions.



Lightweight

Take advantage of technological innovation and choose a lightweight respirator for optimal comfort.



Breathing ease

An efficient exhalation valve and high-efficiency, low breathing resistance filter material will help you to breathe comfortably.



Compatibility with other PPE

Make sure that the respirator you select fits well with the other PPE required for your work such as eyewear and hearing protection to ensure maximum comfort.

Selecting the right product.

Selecting and specifying the appropriate respiratory protective equipment can seem daunting with so many factors to consider. Use our simple four step selection system to ensure the respirator you choose offers the correct levels of protection and comfort required by your employees.

1. Identify the hazards

Industry	Application	Hazard	Filter Rating
General	Sanding, Cutting, Drilling	Rust, metal particles, filler, concrete, stone, wood	P1
	Sanding, Cutting, Drilling	Crystalline silica, cement, wood, steel, paints, varnish, anti-rust coating, steel, stainless steel, anti-fouling varnish	P1 P2
	Low temperature oil spraying, lubricating	Mineral oil, agricultural mineral oil, horticultural mineral oil, oil foam spray, metal working fluid	
Construction	Sanding, Cutting, Drilling	Crystalline silica	P1
	Plastering, Tunnelling, Sawing, Earthmoving, Carpentry	Dust, sawdust	
	Painting, Spraying, Varnishing, Coating, Mixing	Water based paints, roller / brush applied spray coatings, adhesives, cleaning solvents (nuisance levels)	GP1
Metal Fabrication	Oxy-Acetylene cutting, Metal pouring, Soldering, Smelting, Welding, Work with Glass and Mineral fibres	Metal fume	P2
Welding	MIG, TIG, Mild Steel, Zinc (Autogen, MIG/MIK) Stainless Steel (Electrodes), soldering	Welding fume and ozone	P2
Agricultural / Forestry	Sawing, Cropping, cotton ginning, Feeding livestock, allergies	Wood dust, Grain dust, Cotton dust, Animal dander	P1
	Handling infected animals, Cleaning animal sheds, Composting, Waste sorting	Bioaerosols, Bacteria, Fungus, Animal dander	P2
	Spraying pesticide, Herbicide, Fungicide: *low vapour pressure organic compounds	Paint spray, Mist, Dust, Pesticide(water based)	GP1
Mining / Quarrying	Drilling, Blasting, Plant operators	Dust	P1
	Drilling, Blasting, Plant Operations	Diesel exhaust/Smoke	P2
Healthcare	Infection control	Infectious aerosols, TB, Other Bacteria/Virus, Allergies, Pollen, Mold/Fungus	P2 N95
Aluminium Smelting, Cleaning	Chlorine based cleaning, smelting	Acid gases	P2
	Chlorine based cleaners	Acid gases	P1
Agricultural / Forestry	Pesticide spraying, solvent cleaning, welding	Organic vapour	GP2
	Pesticide spraying, solvent cleaning	Organic vapour	GP1
Food and Beverage Manufacturing / Pharmaceutical	Food handling/Fruit & Vegetable Processing/ Manufacturing Pharmaceutical - shaping/ tablet formation, cleaning & maintenance	Dusts, mists and fumes generated during handling of cereal & non-cereal flours, nuts, additives, spices, condiments, coffee, sugar, egg and fish proteins, confectionery, animal & bird feed	P1
	Shaping/tablet formation, medicinal and pharmaceutical product manufacturing, cleaning & maintenance	Pharmaceuticals during the production of prescription drugs	

2. Assess the risk



P1 is the rating given to a respirator which meets AS/NZS1716:2012 for filtering mechanically generated particles, e.g., particles formed by crushing, grinding, drilling, sanding and cutting.



P2 is the rating given to a respirator that meets AS/NZS1716:2012 for filtering mechanically and thermally generated particles, e.g., those from welding fume. Respirators with a P2 rating are also recommended for use in certain applications against some bioaerosols such as H1N1 and H5N1 Influenza.



Type 'G' class rating is suitable for low vapour pressure (below 1.3Pa @ 25°C) organic compounds e.g. many agricultural chemicals like herbicide and pesticide.

3. Select the right respirator *(see page 19 for more selection detail)*

Choose a valved/ unvalved respirator

Once you have selected the protection factor you require, you can then consider whether you need a cup-shaped respirator, or a foldable respirator and whether it is valved or not.

Benefits of a Valved Respirator





- Reduces exhalation effort
- Cooler to wear
- Stays comfortable for longer
- Less likely to mist up eyewear

Benefits of a Unvalved Respirator

- Lower unit cost
- Reduces potential for wearer contamination of their environment

Choose a style

You can choose from: **Comfort**, **Classic** and **Basic** Series. Specialty respirators that provide comfortable protection against particles and certain gases and vapours are also part of our range as are lightweight and effective welding respirators. This wide selection enables you to select the respirator to suit your environment.

			
3M™ Comfort Series	3M™ Classic Series	3M™ Basic Series	3M™ Welding & Specialty Respirators
<ul style="list-style-type: none">• Exceptional comfort• Excellent fit over a wide range of face sizes• Unique designs	<ul style="list-style-type: none">• Traditional cup shape• Lightweight, comfortable and effective• Durable collapse resistant shell	<ul style="list-style-type: none">• Reliable and convenient• Lightweight and economical• Protection you can afford	<ul style="list-style-type: none">• Activated carbon layer• Comfort with technology• High quality performance

4. Fit Test *(see page 20)*

A respirator cannot protect you if it does not fit your face.

Best practice for any Personal Protective Equipment is to ensure the right fit. Proper fitting of a respirator requires the application of an accepted method of fit testing. It is recommended that wearers be fit tested in accordance with Standards Australia's Guidance document AS/NZS 1715:2009.

Training Offered by 3M

Correct use and appropriate maintenance of personal protective equipment (PPE) from 3M makes a major contribution towards ensuring that it provides effective protection. Our experienced sales and technical teams will help you make the most of your products. In compact training modules, they will show you and your employees how to recognize potential hazards, suggest what measures to take and help explain how to choose the appropriate protective equipment for each particular situation.

The Importance of Fit.

Disposable respirators are most effective when there is a good seal between the edges of the respirator and your face. The instant this seal is broken, protection is compromised as contaminated air can leak in through any gaps.

These fitting instructions must be followed each time a 3M™ Aura™ Particulate Respirator 9300A+ Series is worn.



Make sure that your face is clean shaven. Respirators should not be worn with stubble, beards or other facial hair under the area of the face seal as these can prevent a good seal to the face.



Make sure that long hair is tied back and jewellery is removed so that it does not interfere with the seal to the face.

Noseclip should be moulded around nose and cheeks to give a good seal.

Make sure the panels are fully unfolded.

Respirator should be correctly positioned on your face and head.



Upper strap should be positioned on the crown of the head. Strap should not be twisted.

Lower strap should be positioned below the ears. Strap should not be twisted.



1. With the reverse side up and using the tab, separate the top and bottom panels of the respirator to form a cup shape. Bend slightly at the centre of the noseclip.
2. Ensure that both panels are fully unfolded.



- 3a. Cup the respirator in one hand with the open side towards your face.



- 3b. Take both straps in your other hand. Hold the respirator under your chin, with the nosepiece facing upwards and pull the straps over your head.



4. Locate the upper strap across the crown of the head and the lower strap below your ears. The straps must not be twisted. Adjust the top and bottom panels for a comfortable fit, ensuring that the panels and tab are not folded in.



5. Using both hands, mould the noseclip to the shape of the nose to ensure a close fit and a good seal.
 - ⚠ The respirator may not fit as well if you pinch the noseclip using one hand. Use two hands.



6. Perform a fit-check by covering the front of the respirator with both hands taking care not to disturb its fit.
 - If you're using an unvalved respirator, exhale sharply.
 - If you're using a valved respirator, inhale sharply.
 - If air leaks around the nose, readjust the noseclip to eliminate leakage then repeat the fit check. If air leaks at the respirator edges, work the straps back along the sides of the head to eliminate leakage then repeat the fit check.
 - If you cannot achieve a proper fit, DO NOT enter the hazardous area. Consult your supervisor.

Selection Flowchart.

Use the selector below to identify which respirator may be preferred for increased worker comfort.

What type of particles are in your environment?

