



## 3M™ Reusable Half Masks for use in the Healthcare Industry

### Background

There are a number of situations specific to the healthcare industry where workers could potentially be exposed to particulate hazards which require the use of respiratory protection to the highest performance level of a disposable respirator (FFP3) or reusable half mask (P3).

These situations include potential exposure to pandemic influenza virus when carrying out aerosol generating procedures and tuberculosis bacteria.

The Department of Health has composed publicly available documents on Pandemic Influenza Infection Control procedures for Hospitals and Primary Care Trusts<sup>1</sup>. This advises the use of EN149:2001 FFP3 respirators for clinical procedures that generate aerosols.

### Respiratory Protection Options offering FFP3 or P3 performance

#### 1) Disposable Respirators

FFP3 respirators are the highest performance class of disposable respirator, offering an Assigned Protection Factor of 20. They are widely available to the healthcare industry. 3M offers a range of FFP3 disposable respirators as detailed below.

Disposable respirators offer a convenient choice, with no maintenance or decontamination factors to consider.

Specification	3M Product			
CE EN149:2001 FFP3	3M™ 1863 (unvalved)			
	3M™ 1873V (valved)			
	3M™ 1883 (shrouded valve)			
	3M™ 8835 (valved)			
				
3M 1863 (unvalved)	3M 1873V (valved)	3M 1883 (shrouded valve)	3M 8835 (valved)	

#### 2) Reusable Half Masks

Alternatively, a reusable half mask respirator fitted with P3R filters (e.g. 3M™ 7500 Series Reusable Half Mask fitted with 3M™ 6035 P3R encapsulated filters) provides the same level of protection as FFP3 disposable respirators i.e. an Assigned Protection Factor of 20.

Specification	3M Product
 EN140:1998	3M™ 7501 Reusable Half Mask - small
	3M™ 7502 Reusable Half Mask - medium
	3M™ 7503 Reusable Half Mask - large
	3M™ 6035 P3R Encapsulated Filters

This product combination is proving to be an attractive option for the healthcare industry, with several hospitals and Trusts having purchased stocks for pandemic planning, as it offers a number of benefits over traditional disposable respirators:-

#### Reduced Product Costs

When compared with disposable respirators which are discarded after every shift, or between patients, total product purchase costs for reusable respirators are likely to be considerably lower.

#### Reduced Storage Costs

Linked to the above, the storage volumes and costs required are often substantially reduced by choosing a reusable respirator option.

#### Reduced Fit Testing Resource

The Department of Health guidance states that “every user should be fit tested and trained in the use of the respirator.” The 3M™ 7500 Series Reusable Half Mask is supplied in three sizes and features a pliable, silicone face seal, meaning that a successful fit test result is more likely to be achieved first time across the vast majority of face shapes and sizes. This eliminates the extra time and resource involved in retesting a wearer with an alternative model, as can happen when issuing disposable respirators.

# Respiratory Protection for Healthcare Workers

## Fitting a 3M™ 7500 Series Reusable Respirator and Filters



### 3M™ Reusable Half Masks for use in the Healthcare Industry - Frequently Asked Questions

Whilst 3M reusable half masks have been widely used and established in industry for several decades, their use for protection against pandemic flu is a relatively recent development, requiring revision of 3M's standard industrial guidance in order to address some factors specific to the healthcare environment as detailed below.

#### Q- How should the 3M™ 7500 Series Reusable Half Mask fitted with 3M™ 6035 P3R Encapsulated Filters be decontaminated?

**A** - The User Instruction booklet accompanying the 3M 7500 series reusable half mask gives general information about cleaning and disinfecting. It discusses the use of 3M™ 105 Face Seal Wipes and immersion of the mask in detergent or disinfectant solutions followed by rinsing in clean water and drying.

However, the use of reusable respirators for protection of healthcare staff in an influenza pandemic is a recent development which gives rise to additional questions around decontamination and infection control. For this reason 3M has been looking to the hospital microbiology and infection control communities to give guidance on appropriate materials and procedures in healthcare settings.

Some Trusts are taking the view, on advice from their Microbiology and Infection Control Departments, that use of existing detergent or alcohol (70% IPA) hospital wipes on the mask and on the exterior surfaces of the filters will provide adequate decontamination between patients and aerosol generating procedures, as the flu virus is easily destroyed.

*See opposite for an example photograph.*

Deeper cleaning, involving immersion of the mask for approximately 5 minutes in detergent or disinfectant solution may be required as an additional measure, for example, when it is heavily contaminated. Please note that the filters must not be immersed in cleaning or any other solutions and so should be removed from the mask before immersion. The mask should be thoroughly rinsed and dried before refitting filters.

Also note that the 3M 105 face seal wipes mentioned above is a 'face seal cleaner' and not a 'decontamination wipe' and is intended only for cleaning the face seal and inside of the mask as a basic hygiene measure before re-use.

Where hospitals and Trusts have their own alternative cleaning materials and methods, 3M will work with them on a case by case basis to verify whether their decontamination process is likely to damage the respirator or filters.

#### Q – What is the shelf-life of 3M™ 7500 Series Reusable Half Mask and 3M™ 6035 P3R Encapsulated Filters?

**A** – When stored in dry, clean conditions away from direct sunlight and at a temperature between -10°C and +50°C, then the shelf life of the 3M 7500 series reusable half mask and 3M 6035 P3R encapsulated filters is 5 years and 10 years respectively from date of manufacture.

The date of manufacture is marked on the inside of the 3M 7500 series reusable half mask, and the use-by date for the 3M 6035 P3R encapsulated filters is marked on the packaging and on the filter itself.

#### Q – For how long will a set of particulate filters last in use?

**A** – Particulate filters should always be changed when they become clogged with particulate contaminant. The wearer can determine for themselves when this occurs as it becomes noticeably harder to breathe through the filters.

The 3M 6035 P3R filter was designed to be used for prolonged periods in industrial environments where particulate concentrations can reach very much higher levels than are ever likely to be found in healthcare applications. At the very much lower particle concentrations encountered in these settings the capacity of the filters could easily be estimated in weeks or even months.

For this reason, and the fact that the 3M 6035 filter outer casing can be cleaned to satisfy infection control procedures, hospitals and PCT's that have selected the 3M reusable respirator with 3M 6035 particulate filters have generally taken the view that one pair of filters will be retained to last the full duration of a pandemic wave, after which they will probably be replaced for infection control reasons even if they were to have significant filtration capacity remaining.

#### Q – Does the 3M 7500 require any maintenance?

**A** – COSHH Regulations require reusable respirators to be checked every month. This does not mean that filters must be changed at the month point, however consideration and maintenance checks should be carried out and a record of this made. Typical maintenance checks include a thorough visual inspection of the mask and filters and if there are any obvious tears, damage to seals, straps, exhalation/inhalation valves they should be changed and recorded. There are four spare parts available for the 3M 7500;

3M 7581 Head Harness  
3M 7582 Inhale Valve  
3M 7583 Exhale Valve  
3M 7586 Filter Holder

### References

<sup>1</sup> **Pandemic Flu – A summary of guidance for infection control in healthcare settings** – Developed by the Department of Health and the Health Protection Agency Oct : 2007



#### Step 1

Attach filters to respirator by aligning arrow on face piece with line marking on grey inner filter housing. When filter is flush to facepiece turn it clockwise to lock into position. (Reverse this procedure to remove filters.)



#### Step 2

Adjust head cradle size as needed to fit comfortably on head.



#### Step 3

Place respirator over the mouth and nose, then pull the head harness over the crown of the head.



#### Step 4

Take bottom straps in both hands and see how they hook together. Then fasten the bottom strap behind the neck.



#### Step 5

Tighten the top straps first by pulling on ends to achieve a comfortable and secure fit.



#### Step 6

Tighten bottom straps using the rear adjustments. (Strap tension may be decreased by pushing out on back side of buckles).



#### Step 7

Perform a **negative pressure fit check**. Squeeze both filters between the fingers and thumb to block the flow of air through the filter. Then inhale gently and hold your breath for 5 to 10 seconds. If the facepiece collapses slightly then a proper fit has been achieved

**NOTE:** When squeezing the filter, position the thumb as near as possible to where it attaches to the facepiece.

See 2 diagrams below for correct thumb position.



#### Step 8

If the facepiece does **not** collapse slightly, remove and refit the respirator, taking care with the positioning of the facepiece and the adjustment of the straps. If this does not succeed, then repeat the fit check using one of the other sizes available. i.e. 3M™ 7501 Half Mask (small), 3M™ 7502 Half Mask (medium) or 3M™ 7503 Half Mask (large).



#### Step 9

After use, wipe mask and exterior surfaces of the filters with a detergent or alcohol wipe. Decontaminate more thoroughly as required, via immersion of the mask in detergent or disinfection solution for approximately 5 minutes.

**!! Hand Hygiene is critical. Decontaminate hands before fitting your respirator and after use.**

**!! Put on other equipment – aprons, gowns, eye protection, gloves – after fitting your respirator**

**!! Before leaving the area, remove your gloves, gown and eye protection in that order and dispose of as clinical waste. After leaving the area, remove your respirator. See the Department of Health guidance for further information.**

## Other Products Available from 3M

### 3M™ 106 Respirator Carry Case

Ideal for personal issue and storage of 3M™ 7500 Series Reusable Half Masks



### 3M™ 105 Wipes

The 3M 105 Face Seal Cleaner is ideal for wiping the inside of reusable masks after use. Please note, this product is not intended to be used for full decontamination.



### Further help

For further information on the correct selection of 3M PPE, fit testing, other respiratory protective equipment, hearing protection and safety eyewear call the 3M Health and Safety Helpline on **0870 60 800 60** (UK), **1 800 320 500** (Ireland) or visit [www.3M.co.uk/fittestsupport](http://www.3M.co.uk/fittestsupport)



**Commercial Team**  
**3M Health Care Limited**  
3M House,  
Morley Street  
Loughborough  
Leicestershire LE11 1EP  
Tel: 01509 613800  
Fax: 01509 613990

**3M Ireland Limited**  
The Iveagh Building  
The Park  
Carrickmines  
Dublin 18  
Tel: 01 280 3555  
Fax: 01 280 3849

3M is a trademark of the 3M Company  
Please recycle. Printed in the United Kingdom.  
© 3M 2009. All rights reserved.  
CH7500HCARE v2 09/09