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3M™ Comfort Series Respirators 8300 Series (including 8833)

Technical Data Sheet



Description

The 3M™ 8300 Series Particulate Respirators meet the requirement of EN 149:2001+A1:2009 filtering facepiece respirators for use against particles. They provide effective respiratory protection for users in industries where workers will be exposed to solid (dust) particles and/or non-volatile liquid particles.

Applications

These respirators are suitable for use in concentrations of solid (dust) particles and/or non-volatile liquid particles up to the following limits:

Product	EN 149:2001+A1:2009 Classification	Maximum Occupational Exposure Limit (OEL)*	Valved
8310	FFP1 NR D	4	Unvalved
8312	FFP1 NR D	4	Valved
8320	FFP2 NR D	12	Unvalved
8322	FFP2 NR D	12	Valved
8833/ 8833E	FFP3 R D	50	Valved

*Many countries apply Assigned Protection Factors (APFs) which reduce the maximum concentrations of particles in which these products can be used. See national regulations and EN 529:2005.

Respiratory protection is only effective if it is correctly selected, fitted and worn throughout the time when the wearer is exposed to hazards.

Standards

Products are classified by filtering efficiency and maximum total inward leakage performance (FFP1, FFP2 and FFP3), also by usability and clogging resistance.

Performance tests in this standard include filter penetration; extended exposure (loading) test; flammability; breathing resistance and total inward leakage. Reusable products are also subjected to cleaning, storage and mandatory clogging resistance tests (clogging is optional for non-reusable products). A full copy of EN 149:2001+A1:2009 can be purchased from your national standards body.

Filter penetration

The filter penetration, initial and after 120mg of loading with both 120mg of NaCl* and Paraffin Oil, shall not exceed the following limits:



EN 149:2001+A1:2009 Classification	Maximum Filter Penetration
FFP1	20%
FFP2	6%
FFP3	1%

*Loading of NaCl may be stopped if filter penetration during loading is observed to decrease.

Total inward leakage

Ten subjects perform five test exercises whilst wearing the respirator. The total inward leakage inside of the respirator due to face seal leakage, filter penetration and valve leakage is measured for each subject exercise. The subject mean total inward leakage for 8 out of 10 subjects shall not exceed the following limits:

EN 149:2001+A1:2009 Classification	Maximum Total Inward Leakage
FFP1	22%
FFP2	8%
FFP3	3%

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Breathing resistance

The breathing resistance of the respirator is tested during inhalation (continuous flow) and exhalation (cyclical flow). The breathing resistance of the respirators shall not exceed the following limits:

EN 149:2001+A1:2009 Classification	Maximum Breathing Resistance		
	Inhalation at 30l/min	Inhalation at 95l/min	Exhalation at 160l/min
FFP1	0.6 mbar	2.1 mbar	3.0 mbar
FFP2	0.7 mbar	2.4 mbar	3.0 mbar
FFP3	1.0 mbar	3.0 mbar	3.0 mbar

Clogging

For single shift use respirators (NR), the clogging test is optional. For re-usable respirators this test is mandatory. The respirators are loaded with very high amount of Dolomite dust which will tend to clog the filter. After loading with the required amount of dust, the breathing resistance of the respirators shall not exceed the following limits:

EN 149:2001+A1:2009 Classification	Maximum Breathing Resistance	
	Inhalation at 95l/min	Exhalation at 160l/min (continuous flow)
FFP1	4.0 mbar (valved respirator)	3.0 mbar (valved respirator)
	3.0 mbar (unvalved respirator)	
FFP2	5.0 mbar (valved respirator)	3.0 mbar (valved respirator)
	4.0 mbar (unvalved respirator)	
FFP3	7.0 mbar (valved respirator)	3.0 mbar (valved respirator)

Flammability

Tested respirators are mounted on a metallic head which rotates with a linear speed of 60mm/s. The respirators are passed within 20mm of the tip of an 800°C (±50°C) propane burner flame. The respirator shall not burn or continue to burn within 5 seconds of removal from the flame.

Components and materials

The following materials are used in the production of the Comfort Series Respirators 8300 Series:

Component	Material
Straps (yellow for FFP1, blue for FFP2, red for FFP3)	Thermoplastic elastomer (TPE)
Staples	Steel
Filter	Polypropylene
Valve	Polypropylene
Nose clip	Aluminium
Faceseal (8833 only)	PVC

These products do not contain components made from natural rubber latex.

Product	Typical weight
 8310	10g
 8312	15g
 8320	10g
 8322	15g
 8833/8833E	20g

Storage and Transportation

The 3M™ Comfort Series Respirators 8300 Series have a shelf life of 5 years from date of manufacture.* End of shelf life is marked on the product packaging and upon the product. Before initial use, always check that the product is within the stated shelf life (use by date). Product should be stored in clean, dry conditions within the temperature range: - 20°C to + 25°C with a maximum relative humidity of <80%. When storing or transporting this product use original packaging provided.

*The shelf life as defined above remains an indicative and maximum data, subject to many external and noncontrollable factors. It may never be interpreted as a warranty.