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3M™ Aura™ Particulate Respirators 9300+Gen3 Series

Technical data sheet



Product description

The 3M™ Aura™ Particulate Respirators 9300+Gen3 Series meet the requirements of European Standard EN 149:2001 + A1:2009, filtering facepiece respirators for use against particles. They provide effective respiratory protection for use 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

Product	EN 149:2001+A1:2009 classification	Maximum workplace exposure limit (WEL)
9310+Gen3 9312+Gen3	FFP1 NR D	4
9320+Gen3 9322+Gen3	FFP2 NR D	12
9330+Gen3 9332+Gen3	FFP3 NR D	50

*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 NR D	20%
FFP2 NR D	6%
FFP3 NR D	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	2%

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Breathing resistance

The breathing resistance of the respirator is tested during inhalation and exhalation. 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 (R) 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
FFP1	4.0 mbar (valved respirator) 3.0 mbar (unvalved respirator)	3.0 mbar (valved respirator)
FFP2	5.0 mbar (valved respirator) 4.0 mbar (unvalved respirator)	3.0 mbar (valved respirator)
FFP3	7.0 mbar (valved respirator) 5.0 mbar (unvalved 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 3M™ Aura™ Particulate Respirators 9300+Gen3 Series:

Component	Material
Straps (yellow for FFP1, blue for FFP2 and red for FFP3)	Polyisoprene / Polyester
Staples	Steel
Nose foam	Polyurethane
Nose clip	Aluminum
Filter	Polypropylene
Tabs	Polypropylene
3M™ Comfort Cool Flow™ Valve	Polypropylene / Polyester/SBS
Individual wrapper	Polypropylene

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

Typical weight

Product	Typical weight
 3M™ Aura™ Particulate Respirator 9310+Gen3	11g
 3M™ Aura™ Particulate Respirator 9312+Gen3	15g
 3M™ Aura™ Particulate Respirator 9320+Gen3	11g
 3M™ Aura™ Particulate Respirator 9322+Gen3	15g
 3M™ Aura™ Particulate Respirator 9330+Gen3	11g
 3M™ Aura™ Particulate Respirator 9332+Gen3	15g