3M Science. Applied to Life.™



3M™ Aura™ Particulate Respirators 9300+ Series

Technical Data Sheet

Description

The 3M™ Aura™ Particulate Respirators 9300+ Series meet the requirements of European Standard EN149:2001 + 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	EN 149:2001+A1:2009 Classification	Maximum Workplace Exposure Limit (WEL)*
9310+ 9312+	FFP1 NR D	4
9320+ 9322+	FFP2 NR D	12
9330+ 9332+	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	20%
FFP2	6%
FFP3	1%

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

Version: 1
This version is the sole document applicable to the product(s) since its date of publication

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%

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 (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 (continuous flow)
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+ Series:

Component	Material
Straps (yellow for FFP1, blue for FFP2 and red for FFP3)	Polyisoprene
Staples	Steel
Nose foam	Polyurethane
Nose clip	Aluminium
Filter	Polypropylene
Cool Flow™ Valve	Polypropylene / Polyisoprene
Individual wrapper	Polypropylene

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

Product		Typical weight
	3M™ Aura™ Particulate Respirator 9310+	10g
	3M™ Aura™ Particulate Respirator 9312+	15g
	3M™ Aura™ Particulate Respirator 9320+	10g
	3M™ Aura™ Particulate Respirator 9322+	15g
	3M™ Aura™ Particulate Respirator 9330+	10g
	3M™ Aura™ Particulate Respirator 9332+	15g

Version: 1
This version is the sole document applicable to the product(s) since its date of publication

Storage and Transportation

3M™ Aura™ Particulate Respirators 9300+ 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.

Warnings and Use Limitations

- Always be sure that the complete product is:
  - Suitable for the application;
  - Fitted correctly;
  - Worn during all periods of exposure;
  - Replaced when necessary.
- **Proper selection, training, use and appropriate maintenance are essential in order for the product to help protect the wearer from certain airborne contaminants. Failure to follow all instructions on the use of these respiratory protection products and/or failure to properly wear the complete product during all periods of exposure may adversely affect the wearer's health, lead to severe or life threatening illness or permanent disability.**
- For suitability and proper use follow local regulations, refer to all information supplied or contact a safety professional/3M representative.
- Before use, the wearer must be trained in use of the complete product in accordance with applicable Health and Safety standards/guidance.
- These products do not contain components made from natural rubber latex.
- These products do not protect against gases/vapours.
- Do not use in atmospheres containing less than 19.5% oxygen. (3M definition. Individual countries may apply their own limits on oxygen deficiency. Seek advice if in doubt).
- Do not use for respiratory protection against atmospheric contaminants/concentrations which are unknown or immediately dangerous to life and health (IDLH).
- **Do not use with beards or other facial hair that may inhibit contact between the face and the product thus preventing a good seal.**
- Leave the contaminated area immediately if:
  - Breathing becomes difficult.
  - Dizziness or other distress occurs.
- Discard and replace the respirator if it becomes damaged, breathing resistance becomes excessive or at the end of the shift.
- Do not clean, alter, modify or repair this device.
- In case of intended use in explosive atmospheres, contact 3M.
- Before initial use, always check that the product is within the stated shelf life (use by date).

Fitting Instructions

See Figure 1.

Before fitting device, ensure hands are clean.

All respirator components should be inspected for damage prior to each use.

1. With reverse side up and using tab, separate top and bottom panels to form a cup shape. Bend slightly at the centre of the noseclip.
2. Ensure both panels are fully unfolded.
3. Cup respirator in one hand with open side towards face. Take both straps in other hand. Hold respirator under chin, with nosepiece up, and pull straps over your head.
4. Locate the upper strap across the crown of the head and the lower strap below the ears. Straps must not be twisted. Adjust top and bottom panels for a comfortable fit, ensuring panels and tab are not folded in.
5. Using both hands, mould noseclip to the shape of the nose to ensure a close fit and good seal. Pinching the noseclip using only one hand may result in less effective respirator performance.
6. The seal of the respirator on the face should be fit-checked before entering the workplace.

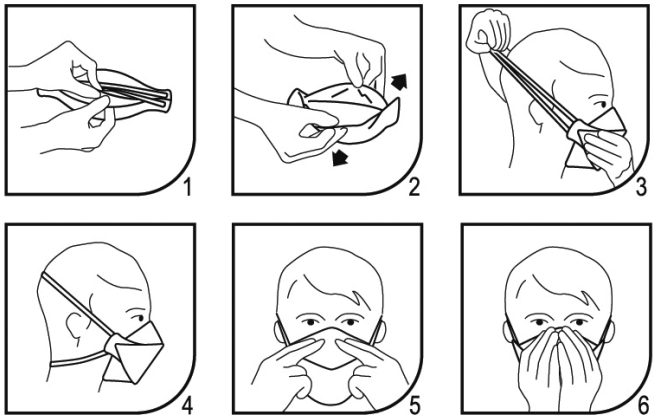


Figure 1.

Fit Check

1. Cover the front of the respirator with both hands being careful not to disturb the fit of the respirator.
2. (a) UNVALVED respirator - EXHALE sharply;
   (b) VALVED respirator - INHALE sharply;
3. If air leaks around the nose, re-adjust the noseclip to eliminate leakage. Repeat the above fit check.
4. If air leaks at the respirator edges, work the straps back along the sides of the head to eliminate leakage. Repeat the above fit check.

If you CANNOT achieve a proper fit DO NOT enter the hazardous area. See your supervisor.

Users should be fit tested in accordance with national requirements.

For information regarding fit testing procedures, please contact 3M.

Disposal

Contaminated products should be disposed as hazardous waste in accordance with national regulations.

Marking

NR	Non reusable (single shift use only)
D	Meets the clogging requirements
	End of Shelf Life. Date format: YYYY/MM/DD
	Temperature Range
	Maximum Relative Humidity
	Name and address of Legal Manufacturer
	Dispose of in accordance with local regulations

Approvals

These products meet the requirements of the European Community Directive 89/686/EEC (Personal Protective Equipment Directive) and are thus CE marked. Certification under Article 10, EC Type-Examination and Article 11, EC quality control, has been issued for these products by BSI, Kitemark House, Davy Ave, Milton Keynes MK5 8PP UK (Notified Body number 0086).

Made in UK, in an ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 certified plant.

Important Notice

The use of the 3M product described within this document assumes that the user has previous experience of this type of product and that it will be used by a competent professional. Before any use of this product it is recommended to complete some trials to validate the performance of the product within its expected application.

All information and specification details contained within this document are inherent to this specific 3M product and would not be applied to other products or environment. Any action or usage of this product made in violation of this document is at the risk of the user.

Compliance to the information and specification relative to the 3M product contained within this document does not exempt the user from compliance with additional guidelines (safety rules, procedures). Compliance to operational requirements especially in respect to the environment and usage of tools with this product must be observed. The 3M group (which cannot verify or control those elements) would not be held responsible for the consequences of any violation of these rules which remain external to its decision and control.

Warranty conditions for 3M products are determined with the sales contract documents and with the mandatory and applicable clause, excluding any other warranty or compensation.

Personal Safety Division
3M United Kingdom plc
3M Centre
Cain Road, Bracknell
Berkshire RG12 8HT
0870 60 800 60
www.3M.eu/URL

Please recycle. Printed in the UK. 3M and Aura are trademarks of the 3M company. Used under licence by 3M subsidiaries and affiliates.
© 3M 2016. All rights reserved. J330254