Advantage® 900 Respirator

Frequently Asked Questions

If I have successfully fit tested on an Advantage 200LS or Advantage 290 Respirator, will a new fit test be required if I move to the Advantage 900 Respirator?

Yes—although the respirator facepiece has the same contours as the other respirators, there is a different head harness, yoke, and attachment method. Further, since this is a different respirator model number, a new fit test would be required.

Can the Advantage 900 Respirator be used with chemical or combination cartridges or Flexi Filters?

The Advantage 900 and Advantage 290 Respirators are approved with the following filter cartridges that are in current production: P100 Low Profile and P100 Splash Guard. It is not approved for use with chemical, combination, or Flexi Filters. MSA has investigated development of a P95 filter cartridge and will consider future approvals on flexi filters. There are no provisions for future inclusion of chemical or combination cartridges. The Advantage 200 LS Respirator is approved with the full line of particulate, chemical, and combination cartridges as well as Flexi Filters.

Does the speech diaphragm in the Advantage 900 Respirator make it unsafe or problematic for use around MRI devices?

No—our speech diaphragm is composed of anodized aluminum. The magnetic field(s) imposed by Magnetic Resonance Imaging (MRI) devices do not interact with non-magnetic/non-ferromagnetic materials such as aluminum and titanium. The Advantage 900 Respriator can be considered safe for use in MRI suites. Like the Advantage 200LS and Advantage 290 Respirators, which are MRI-safe because they have no metal components, all other items on the Advantage 900 represent no risk of MRI interference.

Does the lack of an exhalation valve result in increased breathing resistance?

The Advantage 900 Respirator, with P100 filters and splash guard filters, meets NIOSH requirements for breathing resistance. For inhalation resistance, the Advantage 900 achieves similar performance to that of similar half mask respirators with exhalation valves. Exhalation resistance, however, is elevated but still well within NIOSH parameters.

Since the filters are being used to filter both inhaled and exhaled breath, does any increased moisture buildup affect the filtration performance or service life of the filters?

This is unlikely. Filtration efficiency is not impacted with normal condensing moisture buildup.

Filtration penetration performance would only be impacted when filter media reaches near saturation *(>8 ml per cartridge)*, such as following direct splash or immersion with water. In these conditions, breathing resistance would increase substantially which is an indicator to change filters, per the user's instructions.

Since the filters are being used to filter both inhaled and exhaled breath, is there a risk that viral particulates that were captured in the filter through inhalation can be dislodged and reintroduced in the atmosphere on exhale?

Although filters without exhalation valves are already used throughout healthcare in the form of filtering facepiece/N95 respirators, MSA conducted screening tests on our P100 filters during the development of the Advantage 290 and 900 Respirators. Filters were saturated with up to 115 mg of aerosolized particulate test solution (DOP). Once fully loaded, filters were flipped and tested in the exhalation direction with air flow rates as called out in the NIOSH Standard Test Protocols for filter efficiency testing. During the testing, MSA did not observe re-release of particulates. MSA has not conducted evaluations of particulate release using biological agents.

What is the required changeout schedule for particulate cartridges or filters?

Filter replacement schedules are typically determined by a couple of factors including filter loading *(increased breathing resistance)* and a facility's established infection control policy. Generally, in industrial settings, filters are replaced when soiled or contaminated, damaged, and when breathing resistance increases. However, in healthcare settings breathing resistance will unlikely be a reason for filter replacement since filters should seldom, if ever, become loaded with heavy concentrations of dust.

According to the *NIOSH Guide to the Selection and Use of Particulate Respirators (Publication Number 96-101)*, there are different changeout requirements based on the type of particulate respirator.

...The service life of all three categories of filters efficiency degradation (i.e., N-, R-, and P-series) is limited by considerations of hygiene, damage, and breathing resistance. All filters should be replaced whenever they are damaged, soiled, or causing noticeably increased breathing resistance (e.g., causing discomfort to the wearer).....R- or P-series filters can be used for protection against oil or non-oil aerosols. N-series filters should be used only for non-oil aerosols. Use and reuse of the P-series filters would be subject only to considerations of hygiene, damage, and increased breathing resistance. Generally, the use and reuse of N-series filters would also be subject only to considerations of hygiene, damage, and increased breathing resistance.....R-series filters should be used only for a single shift (or for 8 hours of continuous or intermittent use) when oil is present.

CDC has provided guidance for healthcare settings regarding cartridge reuse during the pandemic:

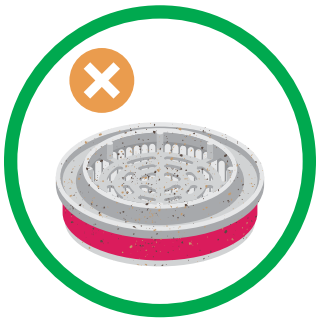
https://www.cdc.gov/coronavirus/2019-ncov/hcp/elastomeric-respirators-strategy/index.html

Filter cartridges *(except for unprotected disc type, i.e., pancake style)* may be used for an extended period if the cartridge is disinfected after each patient interaction provided the disinfectant or cleaning agent does not come in contact with the filter media; *and*

Filter cartridges must not be dipped or immersed in a cleaning or disinfection solution because this may damage or render the filter material ineffective. When using a cleaning or disinfectant wipe on the external surface of a filter cartridge, users should avoid contact with the filter media on the inside of the cartridge.

Each healthcare organization should follow their established infection control policy and replace the filter cartridges when:

It becomes difficult to breathe comfortably *(will vary from individual to individual)*.



The filter becomes dirty or physical damage occurs.

The filter is wet or submerged.

Are alternate cleaning and disinfection methods available?

MSA has provided detailed cleaning instructions in the product manual which includes the use of MSA Confidence Plus 2 Cleaner-Sanitizer. Certain settings in healthcare and pandemic situations may present the need to employ alternate procedures which may have variations to this instruction. If such actions are deemed necessary by the provider or as part of that program, the following alternate instruction is provided.

Remove cartridges and disassemble facepiece.

Inspect the facepiece and filter cartridges per User Instructions for wear or damage, and remove from service or replace parts, as necessary.

To remove debris and soil, manually clean the facepiece by immersing it in warm water with neutral detergent, scrub with soft brush until clean. Rinse thoroughly with fresh warm water.

Disinfect by soaking, wiping, or spraying the facepiece according to facility protocol and User Instructions. Rinse thoroughly with fresh warm water. Air dry in a non-contaminated area.

Inspect and reassemble the respirator, as described in the User Instructions.

On an interim basis, wipe-cleaning of the facepiece and cartridge filters can be employed, but should not be the only method of cleaning and disinfection. Wipe all components with appropriate cleaning solution, including the interior and exterior of the facepiece and head harness, as well as outside of hard plastic cartridges. Allow to dry prior to next use in a non-contaminated area. Inspect prior to use as described in the User Instructions.

Disinfectants that include quaternary ammonium compounds as their active ingredients generally are compatible with MSA's products. A broad range of products on EPA List N may be used, including those with an EPA Reg. No. that starts with 47371-129, 47371-130, 47371-131, or 47371. This list includes MSA's Confidence Plus 2 Cleaning Solution as well as several others.

Disinfectants having other types of active agents *(e.g. sodium hypochlorite, alcohol, etc., in either solution or wipe form)* can be used, though their composition and frequency of use may influence the long-term life of protective respiratory devices.

If I am already cleaning and sanitizing my PPE in accordance with CDC and manufacturer guidelines, can the exterior of a particulate cartridge be sanitized using the same or similar solution or method?

For filter cartridges, the outside surface of the hard-plastic case should be wiped down for cleaning and disinfection using a clean damp cloth soaked in solution. For disinfecting solution, apply until visibly wet for appropriate contact time and then remove the disinfecting solution with a clean, water-soaked cloth and air dry. Do not allow the cleaning or disinfecting solution to reach the internal filter media. Never submerge cartridge filters in any liquid.

What is the shelf life of MSA particulate respirator cartridges?

Low Profile P100 filter cartridges and cartridges with splash guard employ mechanical filtration and are composed of micro-glass filtering materials which have an inherent resistance and/or are formulated to have resistance to atmospheric storage conditions. These products have a proven shelf life of 10 years. Filters should not be used if their age is greater than ten years from the date of manufacture.

Respirator masks may be deployed, regardless of age, provided that pre-use inspections and tests outlined in the instruction manual are successfully passed at the time of deployment.

It is recommended that respirator masks and filters be stored indoors, free from temperature and humidity extremes, with filter cartridges in their original packaging.

Our Mission

MSA's mission is to see to it that men and women may work in safety and that they, their families, and their communities may live in health throughout the world.

MSA: WE KNOW WHAT'S AT STAKE.

Note: This Bulletin contains only a general description of the products shown. While product uses and performance capabilities are generally described, the products shall not, under any circumstances, be used by untrained or unqualified individuals. The products shall not be used until the product instructions/user manual, which contains detailed information concerning the proper use and care of the products, including any warnings or cautions, have been thoroughly read and understood. Specifications are subject to change without prior notice. MSA is a registered trademark of MSA Technology, LLC in the US, Europe, and other Countries. For all other trademarks visit https://us.msasafety.com/Trademarks.

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