

RISING AIR QUALITY CRISIS ACROSS NORTH AMERICA AND THE NEED FOR RESPIRATORY PROTECTION

July 17, 2026

Over the past 48 hours, air quality alerts have been issued across large portions of North America as smoke and polluted air spreads from hundreds of wildfires, impacting more than 120 million Americans*. Cities within the United States, including Chicago, Detroit, Minneapolis, Boston, New York and Philadelphia, have experienced elevated levels of airborne particulate pollution, with some areas reporting Air Quality Index (AQI) readings reaching hazardous levels which are AQI readings exceeding 301.

Attention across North America is currently rightly focused on public health, and those who work in outdoor environments; the operational impact on law enforcement, first responders, security teams and other outdoor personnel – these professionals do not have the option of remaining indoors when air quality deteriorates and protecting their health should be prioritized. They must continue operating in environments contaminated by smoke, fine particulate matter and airborne pollutants caused by these wildfires.

This white paper examines the emerging air quality threat landscape and outlines how respiratory protection systems can help safeguard personnel operating in polluted environments.

THE HUMAN IMPACT OF GROWING AIR QUALITY CHALLENGES

Widespread wildfire activity across Canada and the United States has created one of the most significant air quality events of 2026, so far.

According to multiple reports published within the last 48 hours:

- Air quality alerts were active across at least 17 states.
- More than 120 million people have been affected by smoke-related pollution.
- Areas of Michigan and Minnesota have reached “Hazardous” air quality levels. Portions of Minnesota recording AQI readings exceeding 1,000, which is more than three times the threshold considered hazardous to human health.
- Fine particulate pollution (PM2.5) was identified as the primary health concern.
- Public health guidance has increasingly recommended particulate-filtering respiratory protection for those unable to avoid exposure.

The situation highlights a growing reality: degraded air quality is no longer a seasonal anomaly. Wildfire smoke, industrial emissions, urban pollution and airborne contaminants are becoming recurring operational considerations across North America.

UNDERSTANDING THE THREAT

When the public thinks about smog or wildfire smoke, they often think in terms of visibility; however, the real danger lies in what cannot be seen in the short-term, and their long-term impact on health. Wildfire smoke plumes contain a complex mixture of:

- Fine particulate matter (PM2.5 and smaller)
- Combustion by-products
- Carbon-containing particles
- Toxic compounds released from vegetation, vehicles and buildings
- Industrial contaminants transported through the atmosphere

These particles are sufficiently small to penetrate deep into the respiratory system, where they can impair breathing, contribute to inflammation and negatively affect respiratory health.

For professionals engaged in physical activity, the challenge is amplified. Increased respiratory rates result in greater pollutant intake and exposure precisely when personnel need optimum cognitive and physical performance.

OPERATIONAL IMPACTS FOR LAW ENFORCEMENT AND FIRST RESPONDERS

Poor air quality affects more than health. For operational teams it introduces immediate mission risks:

Reduced Respiratory Performance

Smoke and particulate exposure can make breathing more difficult during prolonged operations, training events and crowd-management activities.

Increased Fatigue

Personnel working in polluted environments may experience increased physiological burden during routine activity.

Degraded Situational Awareness

Smoke, haze and airborne particulates can reduce visibility and impair environmental awareness.

Extended Exposure Durations

Unlike members of the public, law enforcement and emergency response teams often remain in affected environments for extended periods.

Continued overleaf...

AVON PROTECTION'S NIOSH-CERTIFIED MITR™-M1 HALF MASK AND FILTER

Mission-Driven Respiratory Protection for Modern Airborne Threats

For personnel operating in environments affected by smoke, airborne particulates and degraded air quality, respiratory protection becomes an operational necessity rather than a discretionary safety measure.

Avon Protection developed MITR™-M1 to bridge the gap between disposable masks and full-face respirators, providing personnel with scalable respiratory protection against airborne particulate threats commonly encountered during wildfire smoke events, severe air pollution incidents, disaster response operations and routine outdoor missions.

The system combines a military-grade half-mask with the MITR-PF Particulate Filter, which provides particulate filtration efficiencies greater than 99.97% against oil-based and non-oil-based contaminants and is NIOSH P100 certified. This provides protection against a wide range of particulate hazards, including:

- Smoke particulates
- Metal fumes
- Munitions residue particles
- Biological particulates
- Radiological particulates
- Other airborne contaminants



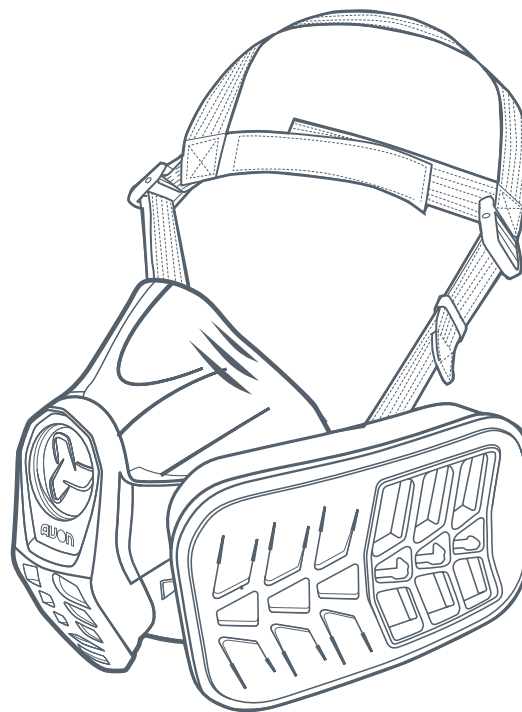
The MITR-M1 and MITR-PF provides protection against airborne particulates only and is NOT suitable for firefighting and wildland firefighting. See below for further manufacturer guidance.

BUILT FOR REALITY

MITR™-M1 delivers several advantages that make it well suited to air quality challenges:

- Compact design in storage and wearing
- Rapid deployment capability
- Integration with operational equipment, headborne systems and communications
- Low breathing resistance
- Reusable mask with replaceable filters
- Designed long duration operational use

For personnel seeking respiratory protection against airborne particulate threats generated by wildfire smoke, urban pollution, training environments or operational deployments, MITR™-M1 provides a practical and mission-focused solution.



PREMIUM MILITARY-GRADE PROTECTION

Avon Protection's premium product portfolio is built on decades of specialist engineering expertise, combining advanced design, high-quality manufacturing and rigorous testing to deliver mission-critical and reliable protection when it matters most. From concept through to production, products are developed to meet the demanding needs of military, law enforcement and first responder users, undergoing extensive laboratory validation, certification testing and real-world field evaluation. As one of the most field-tested brands in the industry, Avon Protection focuses on delivering reliable, durable and high-performance solutions from our UK and US manufacturing facilities, that provide users with the confidence to operate safely in the world's most challenging environments.

CONCLUSION

As smoke seasons become longer and hazardous air quality incidents more frequent, organizations responsible for public safety, law enforcement and emergency response must increasingly consider airborne particulate protection as an essential operational capability rather than an emergency contingency.

Avon Protection's MITR™-M1 offers a modern scalable approach to respiratory protection and enables personnel working outdoors to maintain operational effectiveness while reducing exposure to airborne contaminants.

*Resources: | forbes.com | cbsnews.com | yahoo.com | earthsky.org | [State AQI / AirNow.gov](https://StateAQI.gov) |

For further guidance from the manufacturer, see the [User Instructions for MITR-M1](#) and our [FAQs](#).