

# DIGGING DEEP

## SERIES



### DPF ESSENTIALS

TACKLE DPM AT THE SOURCE FOR CLEANER AIR UNDERGROUND

Underground diesel emissions are harmful. In 2012, the World Health Organisation classified diesel emissions as a Class 1 carcinogen. At Aletek, we're committed to tackling DPM for *Cleaner Air Underground*.

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# S L E E P

## DPM REDUCTION OBJECTIVES

Aletek has identified the following objectives for reducing DPM:

### Tackle DPM at the source for cleaner air

- Long-term exposure to diesel emissions is hazardous; DPFs trap DPM for safer emissions

### Reducing the load on the ventilation system

- Lowering the DPM content in the underground atmosphere reduces the load on the ventilation system

### Reducing personnel exposure risk

- Trapping harmful emissions at the source prevents inhalation of contaminated air

### Satisfy regulated emissions exposure targets

- Safer emissions with minimal DPM contaminants mean less need to measure air quality constantly

## UNDERGROUND MINING – THE AIR WE BREATHE

### A safer underground.

In confined environments, diesel emissions are hazardous if exposed for a prolonged period. Diesel Particulate Matter (DPM) exposure is causing increasing health problems.

We are committed to making underground mining safer, reducing harmful emissions, and trapping DPM. DPFs (Diesel Particulate Filters) trap DPM while reducing carbon monoxide and hydrocarbon emissions.



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# DIGGING DEEP

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### DPM – SMALL PARTICLES, BIG PROBLEM

#### DPM is a Class 1 carcinogen

Exposure to diesel emissions can lead to long-term health problems and cancer risk. In a press release from the World Health Organization in 2012, diesel emissions were classified as a Class 1 carcinogen. Many consider DPM to be the “next asbestos”.

#### The danger of nano particulates

Particulate matter from diesel engines is often smaller than one micron in diameter. The particles are now small enough to enter the alveoli (a membrane that usually prevents particles from entering the bloodstream). Nanoparticles (50-1nm) are fine enough to pass through the subtle respiratory membrane.

#### Side effects of DPM

DPM causes both short- and long-term side effects. The diagram to the right illustrates some of the most common, long- and short-term effects of diesel particulate matter.

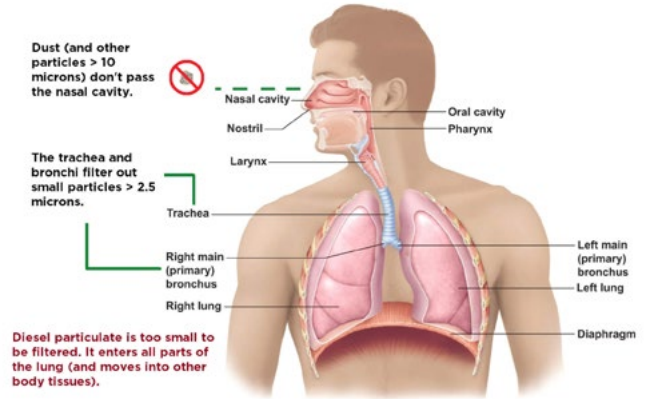


Image: Diesel particulates respiratory dangers (Workplace Safety North, 2018. Page 6)

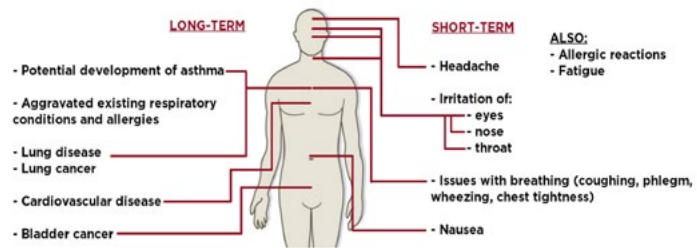


Image: Health effects caused by DPM exposure (Workplace Safety North, 2018. Page 8)



### ENTER DPFS – TACKLE DPM AT THE SOURCE

#### What is a DPF?

A DPF (Diesel Particulate Filter) is an aftermarket or factory-fitted accessory that forms part of the engine ecosystem. DPFs trap diesel particulate matter and reduce carbon monoxide and hydrocarbons from leaving the engine. These filters are installed in line with the existing exhaust system.

### YOUR NEXT STEPS

By upgrading to Aletek DPFs, you can improve air quality and exhaust performance. Our experts can help you reduce harmful emissions from your underground fleet. We offer DPF cleaning, onsite testing, and DPF condition monitoring services.

#### Learn more:

- Get in touch with us to review your underground DPF strategy
- Contact us for a copy of our DPM Reduction technical insights brochure