



micronAir[®]

INTELLIGENT CO₂ EMISSIONS REDUCTION

**WITH FULLY SYNTHETIC MICRONAIR
ENGINE INTAKE AIR FILTERS**

FREUDENBERG
FILTRATION TECHNOLOGIES

 **FREUDENBERG**
INNOVATING TOGETHER



A CLEAR TARGET

MORE EFFICIENCY. LESS FUEL CONSUMPTION. REDUCED CO₂

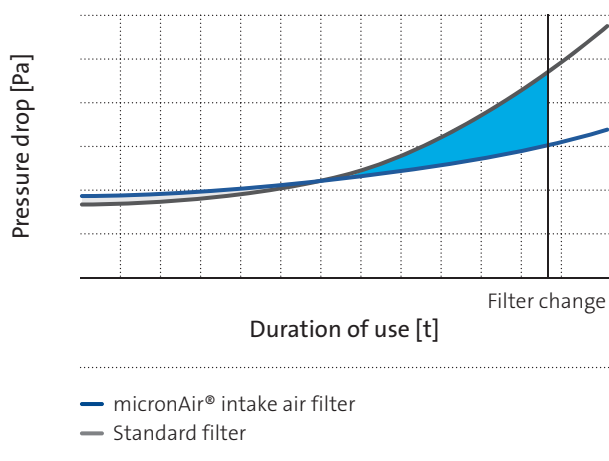
Drivers are experiencing the impact of rising oil prices every day at the gas station. Gasoline is becoming ever more expensive and people are constantly calling for more effective ideas to help reduce fuel consumption. Freudenberg Filtration Technologies provides filter concepts that deliver real energy savings while also helping to conserve valuable resources.

An effective solution: engine intake air filters made of high-performing nonwovens

One of our key goals at Freudenberg is to create, energy-efficient concepts for the automotive industry. Just one example of this commitment is Freudenberg Sealing Technologies development of LESS (Low Emission Sealing Solutions): a unique, comprehensive solution that reduces emissions in passenger cars and commercial vehicles

through more effective seals. As part of the global Freudenberg Group, Freudenberg Filtration Technologies also helps to reduce CO₂ emissions in the automotive industry with our range of fully synthetic micronAir® engine intake air filters.

Improved pressure drop behavior of micronAir® compared to standard filters



micronAir® reduces CO₂ emissions

micronAir® engine intake air filters achieve a large dust-holding capacity with significantly less pressure drop over their entire operational life.

This means:

- Pressure difference only increases slowly
- Pressure losses are significantly reduced
- Less fuel is needed for the same performance
- CO₂ emissions are minimized



Improving the CO₂ balance:

micronAir® engine intake air filters based on nonwovens technology with perfect pleat geometry.

Using micronAir® to boost energy-saving potential

Increased pressure drop in engine intake air filters leads to increased amounts of energy required to achieve the same level of performance. When air filter resistance is increased as a result of dust build-up, more fuel is required. This in turn increases CO₂ emissions. In this respect, standard filters are intrinsically inefficient – unlike micronAir® filters. Due to their progressively structured high-performance filter media, fully synthetic micronAir® filters are characterized by both excellent filtration properties and energy values.

Preferred partner of the automotive industry

Freudenberg Filtration Technologies is the innovation leader and preferred development partner for cabin air filtration solutions in the automotive industry. Our fully synthetic filters also bring measurable benefits to engine intake air filtration, far in advance of standard filters.

EXAMPLE CALCULATION OF THE EFFECTIVE SPECIFIC FUEL CONSUMPTION AT A NOMINAL SAVING OF 10 MBAR PRESSURE BY USING A MICRONAIR NONWOVENS ENGINE INTAKE AIR FILTER

CO ₂ emissions saving	0.6 g/kWh*
Vehicle with 100 kW	60 g/h
Driving duration 700 h	42 kg
Petrol: 0.76 kg pro Liter Diesel: 0.85 kg pro Liter	ø 0.8 kg/l
Petrol converts to: 2.33 kg CO ₂ per liter Diesel converts to: 2.64 kg CO ₂ per liter	ø 2.5 kg CO ₂ **

$$42 \text{ KG} / (0.8 \text{ KG} / \text{L}) = 52.5 \text{ L} \times 2.5 \text{ KG CO}_2 \rightarrow 131.25 \text{ KG CO}_2$$

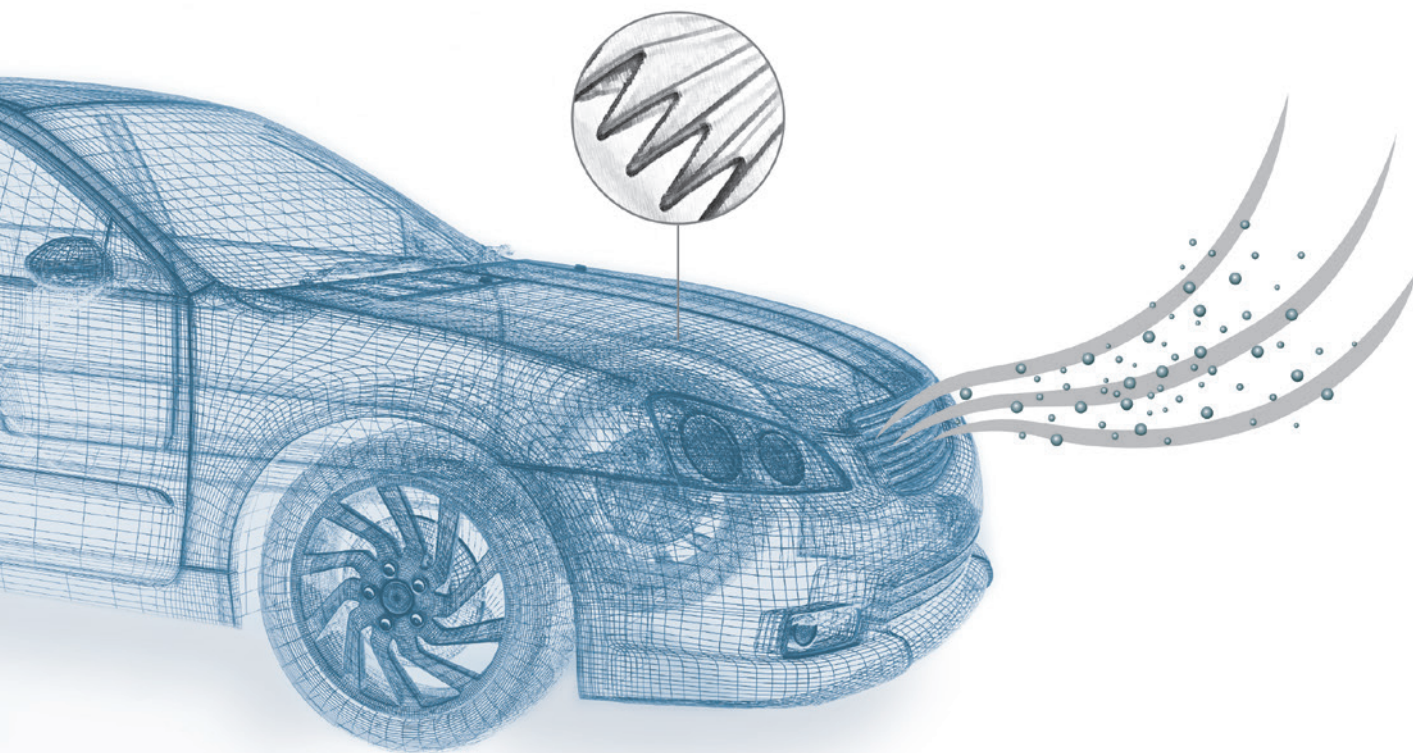
131.25 KG CO₂ SAVINGS POTENTIAL

For a fleet of 100,000 vehicles, the annual saving would be 13,125 t CO₂.
(The same vehicles would have combined CO₂ emissions of 816,000 t)***

* According to Prof. Dr. Ing. Klaus Schreiner, of Combustion Engines and Mathematics, University of Konstanz

** www.spritmonitor.de/de/berechnung_co2_ausstoss.html

*** <http://klimaohnegrenzen.de/Berechnen/detaillierte-co2-bilanz#auto-berechnen>



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