

DECODING THE EMISSIONS ACRONYMS

Staying on top of all the TLAs (yes, there's even an acronym for "Three-Letter Acronyms") associated with emissions standards and technology can be a challenge. Refer back to this list when you need a hand keeping the terminology straight.

DEF

Diesel Exhaust Fluid

A carefully blended solution of high-purity urea and de-ionized water used in selective catalytic reduction solutions. It's injected into the exhaust system, where it decomposes into ammonia, then selectively reduces nitrogen oxides with the help of a catalyst.

DOC

Diesel Oxidation Catalyst

An aftertreatment device that reduces particulate matter by converting carbon dioxide and hydrocarbons to carbon dioxide and water vapor. It optimizes nitrogen monoxide and nitrogen dioxide ratios for both passive diesel particulate filter regeneration and the optimal conversion of nitrogen oxides in selective catalytic reduction.

DPF

Diesel Particulate Filter

An aftertreatment device that captures particulate matter formed during combustion. It can be regenerated passively or actively and allows for lower fuel consumption and better transient response and performance.

EGR

Exhaust Gas Recirculation

Reduces the levels of nitrogen oxides emitted by an engine by recirculating exhaust gas into the engine's cylinder and replacing some of the air with carbon dioxide. That lowers combustion temperature and reduces the amount of nitrogen oxides formed.

NO_x

Nitrogen Oxides

Gases produced from the reaction of nitrogen and oxygen during the combustion of fuels, especially at high temperatures. They're one of two primary exhaust pollutants covered by emissions standards.

PM

Particulate Matter

A complex mixture of extremely small particles and liquid droplets that get into the air, including dust, dirt, soot and smoke. It's the second of two primary exhaust pollutants covered by emissions standards.

PN

Particle Number

EU Stage V emissions standards introduce a particle number limit for engines in the 19-560 kW power range. Meeting this limit is driving widespread application of diesel particulate filters.

SCR

Selective Catalytic Reduction

A catalyzed chemical reaction that reduces nitrogen oxides to water and nitrogen using diesel exhaust fluid. This fluid is injected into a tube where it mixes with the exhaust, and the reactions take place as the mixture passes through the selective catalytic reduction catalyst.

ULSD

Ultra-Low-Sulfur Diesel

Diesel fuel with substantially lower sulfur content that contributes to particulate matter reductions in non-road engines and equipment. Many advanced emission-control technologies require the use of ultra-low-sulfur diesel.