

Sports car manufacturers increasingly rely on Metalit catalysts

Sports car manufacturers traditionally choose Emitec catalysts

Metal catalysts are widely used by the major car manufacturers for their small and medium-sized models, however, it is sports car manufacturers that have traditionally relied on the high performance of the extremely compact Metalit catalysts from EMITEC Gesellschaft für Emissionstechnologie mbH in Lohmar near Cologne. Just as much as car racing, the premium vehicle segment is not prepared to compromise. Car racing would be inconceivable today without Emitec metal catalysts and this has had an impact on production sports cars.

Metalit catalysts are commonly installed in all high-performance vehicles made by luxury carmakers, such as Bugatti Automobiles, Ferrari, Mercedes-AMG, Porsche and many others, and in all sports cars built by the major car manufacturers, such as Audi, BMW, Fiat, Honda, Renault and VW.

The main advantage of Metalit catalysts is their high performance combined with extremely compact construction and minimum pressure and performance loss. Emitec's unique turbulence-generating metal substrate profiles break up the laminar flow inherent in all smooth catalyst channels and so increase mass transport and conversion rates. The structured metal foils have the potential to improve catalyst efficiency. Greater efficiency allows the volume of catalysts with structured foils to be decreased by up to 30 per cent compared to conventional designs without affecting the conversion of pollutants.

Radially open, perforated structures (PE design), longitudinal metal profiles (LS design) and their combination reduce hydrocarbon (HC) and carbon monoxide (CO) emissions quickly and effectively. PE metal catalysts are the only structures that cause gas and mass exchange between adjacent channels. Compared to conventional Metalit catalysts PE catalyst can reduce weight by over 20 per cent and exhaust backpressure by around 10 per cent; when compared to ceramic catalysts these figures are several percentage points higher again. PE catalysts also light off much more quickly.

The luxury sports car manufacturer Mercedes-AMG, Affalterbach, uses perforated Metalit PE catalysts in its new gullwing SLS. With its big-bore V8 aspirated engine, which produces 420 kW (571 hp) this super sports car has a top speed of 317 km/h (197 mph). The PE catalyst has already been able to prove its high performance and reliability in long-distance races, such as this year's Nürburgring 24 hours and the 24 hours at Spa-Francorchamps in Belgium. In Spa the Black Falcon team in the SLS came third in the overall result.

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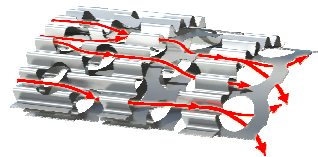
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PE catalysts can be made with very high cell densities of up to 900 cpsi, which have been used successfully in series production. The very sporty Renault Twingo RS with a 1.6-litre, 4-cylinder aspirated engine (133 hp = 98 kW) has a 900-cpsi PE catalyst with a foil thickness of only 40 µm. The weight of the catalyst was reduced by as much as 41 per cent compared to conventional substrates and exhaust backpressure dropped by 18 per cent.

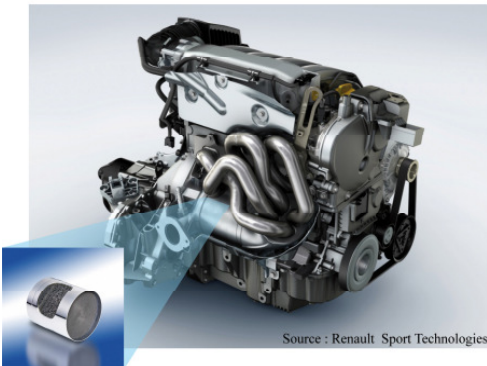
The major advantages of PE catalysts have been recognised not just by sports car manufacturers but also by the emerging carmakers in Russia and India, which have been using Metalit catalysts with a PE structure as standard for the last four years. Future, even more stringent emission limits are another incentive for choosing catalysts with even higher cell densities.



BMW M3 system



PE design



Twingo Renaultsport with PE substrate

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