

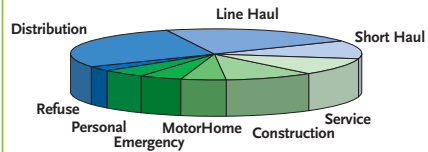
## The benefits of the global Active DPF System Approach

To meet the Automobile Industry specifications and requirements, the DPF System must be durable, reliable, flexible and robust.

The Passenger Cars and Light-Duty Vehicles markets request DPF Systems with active filter regeneration and robust trap materials, such as silicon carbide or metallic based substrates.

In the field of Commercial Vehicles, like Heavy Duty Vehicles, the DPF System specifications strongly depend on the segment application:

### The US HDV Segment (On-Highway)



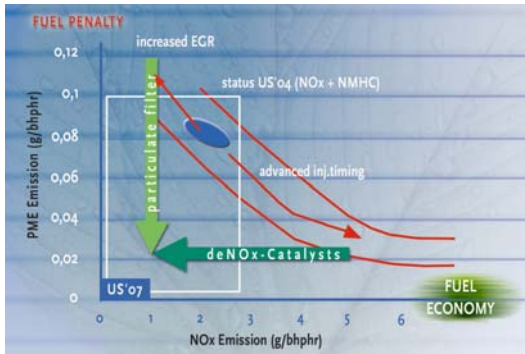
Source: Aaqius & Aaqius Network 06/2003

- Passive DPF System approach, such CRT® system, can only cover 1/3 of the HDV market (line and short haulers), with the use of basic oxides DPF materials.

- For the 2/3 rest of the market (low exhaust temperatures, duty cycles, long idling, variable exhaust conditions...), an Active DPF System approach and filter regeneration strategy are required for reliability, durability, flexibility and robustness.

Through a global Active DPF System approach, a cost effective solution can be proposed, with environmental benefits and global fuel economy, based on current experiences:

- the FBC decreases the fuel consumption and energy needed during the active DPF regeneration;
- the FBC is sulfur insensitive;
- the vehicle integration can be transferred from the passenger car series production to the Commercial Vehicles and Retrofit applications;
- current strategy for filter regeneration can be adapted to the Commercial Vehicles and Retrofit applications.



Source: Daimler-Benz DEER 08/2003

## The Diesel emissions' control challenge

DPF and NOx-Cat for a global approach



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# On the road to GREEN DIESEL



FUEL-BORNE CATALYST + DIESEL PARTICULATE FILTER:  
THE PROVEN TECHNOLOGY

Avert-Boit

THE A-DPF PLATFORM



# Fit-for-life system

Environmentally friendly & cost efficient

Thanks to dramatic technological changes, Diesel now offers the similar handling and driving dynamics as gasoline engines, while reducing fuel consumption at the same time. Today, the image of a loud and wheezy Diesel is totally out of date: spreading direct injection and turbo-compression has changed both the technology's reality and perception.

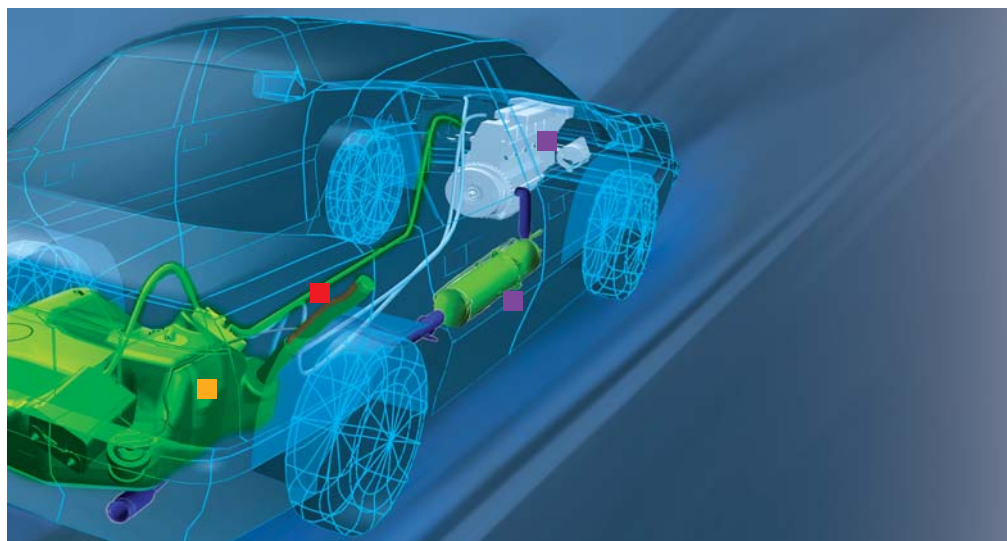
Until recently, soot and nitrogen oxide (NOx) particle emissions inherent in Diesel technology tarnished its image. Emerging stakes in relation with health and environmental issues stimulated car manufacturers, OEMs and industrial chemists to bring forth new ideas and solutions in order to solve the automobile pollution problem. Launched for the first time in series production in 2000, the Fuel-Borne Catalyst based Diesel

Particulate Filter System (A-DPF) treats more than 99% of soot particulate and therefore eliminates black clouds from the exhaust pipe. Catalyzed filters (coated with precious metals) launched end of 2003 confirmed the trend: DPF technology represents the only current industrial solution to make Diesel clean.

To date, the A-DPF is the only technology with field experience and track record in terms of reliability, durability, flexibility and robustness, and the mark of one million vehicles equipped with an additive based DPF will soon be topped. In parallel, the durability of the A-DPF increased with the "250.000km without servicing" target available in 2004, and the simplification of the A-DPF was developed for better vehicle integration and global cost reduction compared to the current alternative DPF System approaches.

In the way of the next step in NOx, Particulate and CO: emissions reduction, it is clear that strong interest in the Fuel-Borne Catalyst based DPF System clearly appears. The flexibility of the FBC based DPF System in terms of thermal management allows fast and complete DPF regenerations at low temperature.

## The ready-to-integrate solution



### THE BENEFITS OF PARTNERSHIPS THE THREE LEADERS COMPANY IN THEIR CORE BUSINESS:

AAQIUS & AAQIUS, INERGY Automotive Systems and RHODIA, put efforts, resources and competencies together through common programs in Diesel emissions control to develop a complete Active DPF System approach based on the Fuel-Borne Catalyst technology. This partnership allows the development of the major Green Diesel system, already proved in Europe for series production and now available for Commercial Vehicles and Retrofit Markets.



Rhodia Electronics & Catalysis is a specialty chemical company and a well-known partner in the automotive emission control industry thanks to its high performance technologies and development of value-added solutions such as Eolys™.

The Eolys™ Fuel-Borne Catalyst ensures Diesel Particulate Filter (DPF) regeneration by complete and controlled combustion of trapped soot: Eolys™ significantly lowers soot light-off temperature and moderates subsequent combustion thus preventing temperature peaks. Totally miscible in Diesel fuel, engine friendly and sulfur insensitive, Eolys™ ensures filter integrity and system durability. Thanks to its concentrated formula and high activity, very low fuel treat rates are possible. On-board volume requirements are consequently minimized. The combination of Eolys™ with a DPF is currently the most efficient solution: reliable, flexible, and cost-effective. ■



Aaqius & Aaqius, a Venture Business Company, founder of the global expertise circle Aaqius Network, is a human and financial business partner targeting several missions: speeding up innovative processes, gaining additional value, sharing inherent risks in innovation. With these goals in mind, Aaqius & Aaqius implemented technological development and enhancement programs, using industrial leaders on the market. Within Diesel Emission Control, Aaqius & Aaqius introduced Biz-P® business development programs and Plat-P® partnership platforms which goal is notably to meet within optimal time future Euro 5, US'07, US'10 and Tier2-Bin5 standards on polluting emission limits and to optimize NOx/PM/CO2 and Integration/Cost compromises. ■



Inergy is the global Tier 1 leader in delivering integrated/complete energy source solutions to the automotive industry. Our fuel systems integrate, from cap to engine and instrument panel, all functions of filling, storage, vapor management, fuel delivery, level measurement and electronic analysis.

Today, our continuous innovations allow us to offer an optimized additive system assuring quick refilling integrated within our fuel systems. Achieving this solution is in line with one of Inergy's commitments: improve fuel system performance for environmentally friendly cars. ■

## The A-DPF : fit-for-life system

