

TERMS

EPA

Environmental Protection Agency

NO_x

Nitrogen Oxides

g/bhp-hr

Grams Per Brake Horsepower Hour

PM

Particulate Matter (Ash and Soot)

EGR

Exhaust Gas Recirculation

ATD

After Treatment Device

ATS

After Treatment System

DOC

Diesel Oxidation Catalyst

SCR

Selective Catalytic Reduction

DPF

Diesel Particulate Filter

BlueTec®

Daimler SCR Technology

ULSD

Ultra Low Sulfur Diesel Fuel

Urea

Clear, Non-Toxic, Biodegradable Liquid

DEF

Diesel Exhaust Fluid – Urea Solution



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www.westernstartrucks.com

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5 Things You Need To Know About



1 Nitrogen Oxides To Reach Lower Levels in 2010

Nitrogen Oxides (NO_x) will be further reduced in all engines manufactured after 12.31.09 as mandated by the Environmental Protection Agency (EPA). NO_x exhausted by the engine must be reduced from 1.0 grams per brake horsepower hour (g/bph-hr) to .20 g/bph-hr.

In 2010, diesel engines installed in Daimler Trucks North America LLC chassis will use Selective Catalytic Reduction technology (SCR), to reduce NO_x downstream of the engine and meet EPA guidelines. SCR technology, known as BlueTec® in Detroit Diesel engines, will be used exclusively by DTNA engine partners.

4 Diesel Exhaust Fluid to be Readily Available in 2010

Trucks with Selective Catalyst Reduction technology will be equipped with an additional tank to hold the Diesel Exhaust Fluid necessary for SCR treatment. Because the After Treatment System is equipped with an efficient DEF dosing system, DEF tanks will not need to be filled more often than every 2.3 diesel refuels. Trucks equipped with a 23 gallon DEF tank will travel over 6000 miles before needing a refill. DEF will be readily available at fuel stops by 2010.

ULSD is a clean burning diesel fuel containing a maximum of 15-ppm sulfur. To meet EPA requirements, all highway diesel fuel sold in the U.S. must be ULSD by the end of 2010. In addition, Low Ash Engine Oils with less than 1% ash, known as CJ-4, will play a significant role in reducing emissions, sludge deposits and engine wear.

Introduced in 2007, ULSD and Low Ash Engine Oils are now widely used and readily available.

2 SCR and Existing Emission Control Technology Will Improve Air Quality

Our EPA 2010 exhaust system solution will rely on the existing EPA 2007 After Treatment Device (ATD), with the addition of SCR, to meet the emission goals. This system is called the After Treatment System (ATS).

Daimler Trucks North America LLC and its engine partners have determined that this system is the best solution to meet the 2010 goals. Not only is it a proven technology, having been used in Europe for several years, it also improves fuel economy and allows maintenance intervals to remain unchanged.

5 SCR Technology Will Significantly Reduce Emissions

Daimler Trucks North America LLC will offer one of the widest and most complete selections of ATS configurations in the industry. Available in 2010 trucks, and going forward, the new ATS designs, such as an under-step, mid-chassis or vertical system will serve an important role in reducing emissions and improving air quality, while meeting the specific application needs of our customers.

Because there will be restrictions on currently available vehicle configurations, specific custom solutions will be addressed as available.

3 How ATS Technology Will Reduce Emissions

The 2010 Heavy-Duty After Treatment System (ATS) utilizes the engine manufacturer's SCR technology for emissions control. In the ATS, the exhaust gases pass through the DPF and then through another canister housing the SCR device. A controlled quantity of Diesel Exhaust Fluid (DEF) is injected after the gases pass through the DPF. DEF is a 32.5% solution of pure urea in water and is colorless, non-toxic, biodegradable and easy to handle. In the presence of heat from the exhaust gas, DEF is converted to ammonia (NH₃) gas. The ammonia gas reacts with NO_x in the SCR device to yield harmless nitrogen (N₂) and water vapor (H₂O), which exits out of the vehicle tailpipe.

SCR technology has been proven as an extremely effective emissions control solution and will be the key enabler to achieve the EPA 2010 NO_x standard of .20 g/hp-hr.

In all engines, DPF maintenance intervals will remain the same as 2007.

EPA 2010
DAIMLER TRUCKS NORTH AMERICA

