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Prag, 17.05.2004

Measuring Report

Nr. 50057-04

Investigation of Emission- and (Fuel) Consumption Reduction as well as Soot Reduction of a Ceramic Lubricating Oil Additive

Client:.....	Firma WABO-Schmiertechnik GmbH & Co. KG Speckbrodi 8 D-86759 Wechingen
Subject of the Investigation:.....	**Universal Micro- Ceramic- Oil**
Purpose of the Investigation:.....	Reduction of Emission, Fuel Consumption and Soot during the Use of the Ceramic Lubricant Oil Additive **„Universal Micro Ceramic-Oil“** in a Motorcar with a Diesel Engine.

Testing Vehicle, Testing Equipment and Test Procedure

Testing Vehicle
Technical Data:

Brand:	Mercedes Benz
Type:	E270 CDI
Capacity	2685 ccm
Max. Power:	125 kW / 4200 min^{-1}
Turbocharging:	Yes
Pollutant Class:	Euro 3
Fuel:	Diesel
First Registration:	2002
Mileage	44475 km
Equivalent Centrifugal Mass:	1810 kg
Absorbed Power at 80 km/h:	8.1kW

Testing Equipment:

Roller Brake:	Schenck	364/GS56
Acceptance System:	Horiba	CVS 7300 T
Gas Analyzers:	Horiba	MEXA 7200 HTR

Test Procedure:

Measurement of Emission and Fuel Consumption acc. to ECE 83.05 und ECE 101 (EURO 3/4):
Date of test: May-13-04

According to the reference measurements the ceramic lubricant oil additive **Universal Micro-Ceramic-Oil** was added to the engine oil according to manufacturer data with 10 %.

Measuring Results:

With the adding of the ceramic lubricant oil **Universal Micro-Ceramic-Oil** a significant reduction of the emission values, the soot discharge as well as the fuel consumption could be achieved. Thus error sources can be excluded in any respect.

Prague, May 17, 2004

Dipl.- Ing. Pavel Štěrba
Manager of the Testing Laboratory

Dipl.- Ing. Josef Přibyl, CSc.
Manager of the Motor Division

Measuring Protocol

Emissions: Testing Cycle ECE 83.05 (Euro 3/4) at Warm Engine

Test	km	CO			HC			NO_X			HC + NO_X		
		1.Ph	2.Ph	Ø	1.Ph	2.Ph	Ø	1.Ph	2.Ph	Ø	1.Ph	2.Ph	Ø
E 270 CDI	44475	0.002	0.001	**0.001**	0.010	0.019	**0.015**	0.618	0.575	**0.591**	0.628	0.594	**0.606**
With Ceramic-Oil	44509	0.000	0.003	**0.002**	0.004	0.014	**0.010**	0.500	0.549	**0.531**	0.503	0.562	**0.541**
Difference	%	+n/a	+n/a	+n/a	- 60	- 26	**- 33**	- 19	- 5	**- 10**	- 20	- 5	**- 11**

Remarks:

- all results are in g/km
- the first phase is the simulation city traffice, the second phase is the simulation country traffic.
- the first phase corresponds to a distance of 4,05 km, the second phase corresponds to a distance of 6,96 km
- CO = Carbon Monoxide, HC = unburned Hydrocarbons, NO_x = Nitrogen Oxides

Fuel Consumption and CO_2 Emission acc. to ECE 101 (at warm engine)

Test	CO_2			Consumption		
	1.Ph	2.Ph	Ø	1.Ph	2.Ph	Ø
E 270 CDI	273,15	179,63	**226,39**	10.35	6,81	**8,11**
With Ceramic-Oil	264,33	176,79	**220,56**	10.02	6,70	**7,92**
Difference %	3,2	- 1,6	**- 2,6**	-3,2	-1,6	**- 2,4**

Remarks:

- Consumption in Ltr./100km, for CO_2 g/km
- the first phase is the simulation city traffice, the second phase is the simulation country traffic.
- the first phase corresponds to a distance of 4,05 km, the second phase corresponds to a distance of 6,96 km
- Fuel density 0.748 kg/dm^3

Soot Discharge

Test	Particle Discharge g/Test Run	Particle Discharge g/km
E 270 CDI	0,811357	0,073432
With Ceramic-Oil	0,713938	0,064435
Difference %	**-12,01**	**- 12,4**