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Prag, 18.12.2003

Measuring Report

No. 50157-03

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

Client:.....

Polly Ceram
MAS Marketing GmbH
Danziger Platz 8
D-71332 Waiblingen

Subject of
Investigation:.....

„Polly Ceram Spezial“

Purpose of
Investigation:.....

Reduction of Emission, Fuel Consumption and Soot as well
as Power Optimization during the Use of the Ceramic
Lubricant Oil Additive „Polly Ceram Spezial“ in a Motorcar
Otto Engine



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Testing Vehicle, Testing Equipment and Test Procedure

Testing Vehicle

Technical Data:

Brand:	AUDI
Type:	A3
Engine type:	BGU
Capacity:	1595 ccm
Max. Power:	75 kW / 5600 min ⁻¹
Turbocharging:	No
Pollutant Class:	Euro 4
Fuel:	Super lead free (95 Oktan)
First Registration:	Dec-08-03
Mileage:	985 km
Equivalent Centrifugal Mass:	1360
Absorbed Power at 80 km/h:	8.4 kW

Testing Equipment:

Roller Brakes:	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 and ECE 101 (EURO 3/4):

Power Measurement:

Date of Test: Dec-16-03

According to the reference measurements the ceramic lubricant oil additive **Polly Ceram Spezial** was added to the engine oil according to manufacturer data with 5 %.

Measuring Results:

With the adding of the ceramic lubricant oil **Polly Ceram Spezial** a significant reduction of the emission values, the soot discharge as well as the fuel consumption and a power increase could be achieved. Remarkable is the fact that a brandnew vehicle with pollutant class Euro 4 was tested. Thus error sources can be excluded in any respect.

Prag, Dec-18-03

Dipl.- Ing. Pavel Štěřba
Manager of Testing Laboratory

Dipl.- Ing. Josef Příbyl, CSc.
Manager of Engine Division



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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
AUDI A3	985	0.000	0.021	0.013	0.027	0.005	0.013	0.069	0.019	0.037	0.096	0.024	0.050
Polly Ceram Spezial	1166	0.015	0.016	0.016	0.020	0.003	0.009	0.019	0.013	0.015	0.039	0.016	0.024
Difference	%	+n/a	-24	+23	-26	-40	-31	-72	-32	-59	-59	-33	-52

Remarks:

- all results are in g/km
- the first phase is the simulation city traffic, 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

Power Measuring:

Test	km	Speed of Rotation U/min	Power in KW	Difference %
AUDI A3 untreated	985	3660	46.5	-
		4420	55.8	-
		5450	59.4	-
With the Polly Ceram Spezial Treatment	1166	3680	46.4	+0
		4520	55.9	+0
		5480	60.4	+2

Remark:

The given values are calculated values that were determined under consideration of the atmospheric pressure, the tire pressure, the engine temperature and the air temperature in the intake channel.

Fuel Consumption and CO₂ Emission acc. to ECE 101 (at warm engine)

Test	CO ₂			Consumption		
	1.Ph	2.Ph	Ø	1.Ph	2.Ph	Ø
AUDIA3	256	139	182	10.8	5.9	8,35
Polly Ceram Spezial	216	113	164	9,1	4.8	6,95
Difference %	-15,7	-18,7	-17,2	-15,7	-18,7	-17,2

Remarks:

- Consumption in Ltr./100km, for CO₂ g/km
- the first phase is the simulation city traffic, 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/dm³