ANALYTICAL REPORT

ECO PILL AND ECO FXO

BTRL

ANALYTICAL REPORT No. 30621/03-01, 28th April 2003
Client: FLEX-O UK Ltd.
Contracts: SGS UK Ltd. Member of the SGS Group Europe (Societe General de Surveilance)

Registered in England No.1195988
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Ellesmore Port Cheshire CH65 3EN
United Kingdom

Laboratory test:

A sample of Unleaded Motor Spirit (ULMS) was purchased from a local Shell garage. 5 litres of fuel were closed with 0,9817 g of additive supplied by FLEX-O UK Ltd. (equivalent to one tablet in 15 litres) and then dosed sample tested as above.

Precision parameters apply in determination of the above results.
Also refer to ASTM D3244-90a IP367/96 and IP Standards (The methods).

Method ASTM-D525-95	Induction period @ 100°C	Result=360
Method IP 375	Property Sediment (0,01)	Unit % (m/m)
Method ASTM D4740-95	Property Stability 1	
Method IP 388	Total Insolubles 0,3	Unit mg/100 ml
Method IP 53	Sediment by extraction (0,01)	Unit % mass

Millbrook Testing Grounds

The work involves testing the vehicle ona a chassis dynamometer. The vehicle is secured on the dynamometer and the driver than follows a sec driving cycle. During the test the exhaust emissions are sampled, with a sample collected in a storage bag. At the end of the test the sample bags are analysed to give the most emissions for each sub-cycle. Additionally for Diesel vehicle, particulate matter is collected on a filter paper of known weight. At the end of the test, the filters are conditioned at a set temperature & humidity and then weighed.

Fuel
To avoid variation in the fuel used, the whole test programme is run on single batch of fuel. This involves emptying the fuel tank on arrival, refilling the rest fuel and running the vehicle to flush out the old fuel.

Reference element:
-first without the product
-then with the product

Vehicle conditioning
The vehicle was subjected to standard conditioning before each test, to minimize variations in the exhaust emissions due to the vehicles previous use.

Fuel

Type of sample: Local Shell Recall Pump - Eastham
Products: ULMS &ULSD
A sample of Ultra Low Sulphur Diesel (ULSD) and Unleaded Motor Spirit (ULMS) was purchased from a local Shell garage.

NVEG TEST: The vehicle is secured on the dynamometer and the driver then follows a set driving cycle at steady speed of 40 miles per hour to determine fuel consumption and levels of noxious fumes.

TEST CYCLES: This is required for type approval of new vehicles with regard their emissions and also for fuel consumption. This cycle is most widely used in Europe. This is a cold start test.

Vauxhall Corsa N924 DUR - 1995 // Catalytic converter – YES // Fuel type - Petrol

Test start	After ECO PILL insertion 2 pills used two full petrol tanks
11th February 2003	26th February 2003
Mileage 59 107	Mileage 59 582
HC ppm 16 vol.	HC ppm 8
Noxious fumes reduced by 50%	

Ford Fiesta K824 SLC -1986 // Catalytic converter - NO // Fuel type - Petrol

Test start	After ECO PILL insertion 1 full fuel tank
13th February 2003	14th February 2003
Mileage 122 001	Mileage 122 113
HC ppm 58 vol.	HC ppm 24
Noxious fumes reduced by 62%	

Audi A4 LON23 5NE - 2002 // Catalytic converter -YES // Fuel type - Diesel

Test start	After ECO PILL insertion
11th February 2003	26th February 2003
Mileage 9017	Mileage 9499
HC ppm 17 vol.	HC ppm 7
Noxious fumes reduced by 56%	

Fiat – A960 8DP – 1982 // Catalytic converter -NO // Fuel type - Petrol

Test start	After ECO PILL insertion
14th February 2003	24th February 2003
Mileage 87 772	Mileage 87 942
HC ppm 86 vol.	HC ppm 28
Noxious fumes reduced by 66%	

Measuring an additive fuel economy

Vauxhall Corsa N924 DUR-1995 // Catalytic converter -YES // Fuel type – Petrol

Without FLEX-O additive
The engine was run at steady speeds of 40 miles per hour using Unleaded Motor Spirit (ULMS) purchased from a local Shell garage.
Average fuel consumption was 29,4 miles per gallon, total miler run 452.

With ECO PILL treatment
Average fuel consumption was 33,2 miles per gallon, total miler run 452.

Increase in Fuel economy by 12%
After 1123 miles at speed of 40 miles per hour fuel consumption 30,3 miles per gallon.
After 1450 miles at speed of 40 miles per hour fuel consumption 29,01 miles per gallon.

Audi A4 LON23 5NE – 2002 // Catalytic converter -YES // Fuel type – Diesel // Mileage 9017

The engine was run at steady speeds of 40 miles per hour using Ultra Low Sulphur Diesel (ULSD)
Average fuel consumption was 31,3 miles per gallon, total miler run 452.

With ECO PILL treatment
Average fuel consumption was 33,8 miles per gallon, total miler run 452.

Increase in Fuel economy by 8%
After 1123 miles at speed of 40 miles per hour fuel consumption 30,7 miles per gallon.
After 1450 miles at speed of 40 miles per hour fuel consumption 39,01 miles per gallon.

Heavy Duty Vehicle Test
Volvo FL C – S104 LTR – 1999 // Gross Weight 7,500 // Emission class: Euro 2
Fuel type – Diesel // Mileage 98 979

The engine was run at speeds of 40 miles per hour using Ultra Low Sulphur Diesel (ULSD)
Load 1500 kg
Average fuel consumption 15,3 miles per gallon load of 1,500, total miles run 250 at steady speeds of 40 miles per hour.

With ECO PILL treatment
After 250 miles - load of 1,500 kg at speed of 40 miles per hour, fuel consumption 14,5 miles per gallon.

Increase in Fuel economy by 5,5%
After 1150 miles at speed of 40 miles per hour fuel consumption 15,1 miles per gallon.

Emissions Testing-
Fuel saving/emission reducing devices

The B-TRL and USA test procedure recommends:

ECO PILL AND ECO FXO

Petrol and Diesel Saving Pill

Description: Determining the dispersion ability (detergence)

Pertinences: Due to the asphaltene molecules a strong tendency to agglomerate it represents a challenge for fuel additives and hard to burn.

Results: ECO PILL and ECO FXO disperse more then 80% of the agglomerated asphaltines in a given petrol and disperses more then 72% of the agglomerated asphaltines in a given diesel.

Determining the oxidising stability of distillate fuel oil (accelerated method)
Pertinences: Using accelerated oxidising conditions supplied by the continuous bubbling of oxygen through the storage stability of the fuel.

Results: Insolubles were reduced by 24%
The long term stability of the fuel is improved

Measuring an additive toxic level
Measuring inflammation levels

Flex-O formula saving pill is not in high inflammable category

According to BTRL British Transport Research Laboratory product is safe to use in compliance with the manufactures instructions.

Warning: ECO PILL itself may change if exposed to direct sunlight or strong heat.

Emma Burton, B-TRL

www.flexoeco.com

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