



FIA Foundation
for the Automobile and Society



EcoTest: superminis and small family cars



Questions and Answers

Why has the EcoTest research been conducted?

The aim of the research is to provide consumer information on aspects of the environmental performance of popular car models in Europe. It is hoped that the publication of the EcoTest programme may help to raise awareness of the environmental choices available to motorists.

Who has conducted the tests?

The protocols have been designed and the tests have been conducted by the German automobile club ADAC, at their test laboratory in Landsberg, Bavaria. The EcoTest has been financed by the FIA Foundation.

How were the tested cars selected?

The selection of the tested cars is based on the European market share of the car model. For each particular model different engines were chosen: the version with biggest market share and the version with the lowest fuel consumption according to the recommendation of the manufacturer. This approach was carried out – if available – for each Petrol and Diesel engine.

How are the star ratings awarded?

The EcoTest star rating is calculated by rating pollutants and CO₂. The pollutants are rated according to threshold. Five stars can be gained if during all cycles the Euro 4 Petrol regulations are met. For HC, CO and NO_x the worst case principle has been chosen, particles are also part of the calculation. The CO₂ rating is class dependent. This means that a luxury car may consume 6.8 litres per 100 km to gain 5 stars while a supermini car may consume about 3 litres per 100 km for the same result. The overall star rating is calculated by combining the points gained in the pollutant and CO₂ tests.

Why are the tests carried out with additional cycles and also including air conditioning compared to the homologation of the cars?

The New European Driving Cycle represents real life only to a certain extent. In order to more closely replicate the way cars are driven by consumers we decided to introduce a highway cycle and also to test the cars with air conditioning in a praxis relevant setting.

Why do the Petrol cars already gain very good ratings for pollution, some even achieving five stars?

Exhaust emissions meeting EU Euro 4 Petrol regulations represent a major advance in making cars cleaner, and will play a key role in improving air quality. This is reflected in many of the Petrol car results. Policymakers agree that the priorities now are to reduce Diesel pollutant emissions to the level of Euro 4 Petrol and to reduce CO₂ emissions. This is the challenge for future engine development.

Why do not all Petrol cars which fulfil Euro 4 regulations gain five stars in the pollution rating?

The Euro 4 regulations are based on the New European Driving Cycle. The EcoTest is additionally based on measurements with air conditioning and a highway cycle. These additional tests enable EcoTest to measure whether each car also fulfils Euro 4 regulations during so called “off-cycle” conditions.

Do “Eco” versions of the car models provide less comfort and less driving performance?

All cars, except the best performing Opel Corsa 1.0 Eco, have been tested with air conditioning. The additional fuel consumption is included in the test results. The tested versions which have been stated as having “less fuel consumption” by the car manufacturer provide less power in most cases. As an exception the Golf FSI shows that the latest technical development can combine good environmental behaviour and sufficient driving performance.

Which are the best performing cars in EcoTest?

The car with the best overall result is the Opel Corsa 1.0 Eco (Supermini cars) which has been tested without air conditioning. The best small family car is the Toyota Prius 1.5 Hybrid. In general the Petrol cars gain good ratings for pollution, while the Diesel cars have advantages with CO₂. Although the Diesel rating of pollution is poor compared to Petrol engines, the next steps in Diesel technology should equalise the Petrol and Diesel engines concerning pollution. The lower CO₂ emissions of Diesel will then be more obvious.

How do the thresholds of CO₂ relate to fuel consumption?

Vehicle class	5 stars			1 star		
	CO ₂ [g/km]	Petrol [l /100 km]	Diesel [l /100 km]	CO ₂ [g/km]	Petrol [l /100 km]	Diesel [l /100 km]
1	60,00	2,6	2,3	150,00	6,4	5,7
2	60,00	2,6	2,3	150,00	6,4	5,7
3	70,00	3,0	2,6	175,00	7,5	6,6
4	85,00	3,7	3,2	205,00	8,7	7,7
5	105,00	4,5	4,0	250,00	10,6	9,4
6	130,00	5,6	4,9	300,00	12,7	11,3
7	160,00	6,8	6,0	370,00	15,6	13,9