Additives

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Safety

Additives do not benefit road safety in the way that brakes, seatbelts or airbags do, for example. However, they do make a valuable contribution to the operational reliability of a car. Special additives, for example, ensure that diesel fuel remains fluid and does not separate at extreme temperatures below zero.

Depending on property, additives will keep the engine clean from the inside or clean away pre-existing soiling. The importance of this is can be illustrated by the following scenario. Over time, deposits, for example, can build up in the injection system. These deposits cause the vehicle to gradually lose power, but these losses go virtually unnoticed. At some point, malfunctions occur which require a visit to a garage and expensive repairs are unavoidable. If the damage is not rectified, in the worst-case scenario, the engine can sustain damage whilst on the road. If this creates an accident risk, this is the ultimate point at which additives will become relevant from the point of view of safety. The use of additives enables an engine to maintain its reliability, performance and readiness for operation or restores these properties following cleaning. A drive that is functioning accurately can be relied upon at all times.

Function

Additives are substances that are added to engine oil, transmission oil and coolant to improve their properties. Additives are even added to fuels and oils in refineries. Without additives, neither fuel nor oil would be able to deliver the required power. If modern vehicles were filled with fuel without additives, they would hardly get anywhere. Engine oil without additives would struggle to withstand the stresses and strains of modern engines and may even cause them irreparable damage. As such, additives are not just well tolerated – they are actually of vital importance to cars. Every driver uses them all the time, even if they are not aware of it.

Lots to do!

Additives perform many different roles: they must have a cleaning effect, care for mechanical components and protect them against wear. They also contribute to improving quality, to protecting against corrosion, to minimising foaming and to increasing power. Additives for engine oils are adapted specifically to the prevailing requirements resulting from the engine concept and the requirements of the automobile manufacturer.

Essentially there are two different types of additive. The first type are added to fuels and oils even before they leave the refinery. Drivers have no control over this process. However, additives which can be purchased from specialist retailers for mixing in with engine oil or fuel following the instructions issued by the corresponding supplier are a different story. These additives lend operating fluids additional properties which in many cases solve problems and can prevent expensive repairs.

So additional additives can help to save money. The benefits of additives can quickly be seen and felt

by drivers in the form of fuel consumption falling or engines running more smoothly, for example. Their indirect benefits are even more important: when the engine, the oil system and the fuel system are cleaned, cared for and preserved with additives, the car becomes more reliable, expensive repairs are more likely to be avoided and the service life of the vehicle is extended. Several thousand euros can thus easily be saved over the lifetime of a vehicle.

Additional additives are useful accessories but not a miracle cure. Although they do of course provide assistance (they can help to reduce fuel consumption, for example), promises like "cuts fuel consumption by a third" are dubious and physically impossible. Reputable manufacturers will never be heard to make statements of this nature. They can make reference to tests carried out with recognised and well-known test institutes which have confirmed the effectiveness of additives in trials.

Super E10 fuel

E10 fuel has been available at pumps since the start of 2011. This special "super fuel" contains 10% ethanol. For the time being, standard commercial petrol containing 5% ethanol will remain on sale. For technical reasons, not all vehicles can run on E10 fuels. Using E10 can lead to the following problems, some of which can be prevented with additional additives:

- Corrosion of light-metal components made of materials like aluminium. The alcohol in the fuel causes acidification over time, resulting in corrosion of aluminium and magnesium. Additives such as petrol stabilisers can counter these phenomena (prevent corrosion).

- Lack of compatibility with some gaskets. In older vehicles, there may be a lack of compatibility with old sealing material when using E10 fuels. At the current time, there is no fuel additive that can solve this problem. Therefore, vehicles that have not been approved for E10 cannot be made compatible with the new fuel by mixing in fuel additives.

- Increased deposits on intake valves, injection nozzles and in the combustion chamber. The increased alcohol content in the fuel results in more deposits on intake valves, injection nozzles and in the combustion chamber. Special cleaning additives will remove deposits that have accumulated in these areas. Residue and deposits can be avoided by choosing to use the right additives preventively from the very start. This will safeguard the reliability and smooth running of the engine.

Environmental protection

Additives protect the environment. Clean engines burn fuel efficiently and make the best possible use of the energy contained therein. As a result they consume less fuel than engines soiled by deposits. Some additives can even reduce fuel consumption. Less fuel burned means lower CO_2 emissions. This is a bonus for the environment.

Depreciation

A wide selection of additives can be purchased from specialist retailers. In both newer and older vehicles, they can help to cut costs, avoid repairs and maintain the value of the car. In newer vehicles,

the use of additives can be advisable for the following reasons:

- Running in. All new cars need to be run in. Although today's production processes are very precise, engine components still need to "bed in". Certain additives for engine oil assist running in, for example, by helping lubrication and preventing excess wear during "bedding in".

- Care. A new engine that has been run in will be at the top of its game. However, wear and combustion residue take their toll as the kilometres are clocked up, reducing power, increasing consumption and making the engine susceptible to failures and repairs. The aim should therefore be to provide the engine with the best possible protection against dirt and wear right from the start. Special cleaning additives can do this.

- Fuel quality. Modern engines rely on high-quality fuels. Fuel quality can vary from country to country and even from pump to pump. An engine running on poor-quality fuel cannot deliver full power and does not run smoothly. Fuel combustion is no longer clean and deposits build up inside the engine, posing a risk of damage.

The following reasons argue in favour of using additives in older vehicles:

- Noise generation. As time passes, engine wear increases. The noise generated by the engine gets louder as a consequence. Special oil additives are able to lower friction in the engine (using MoS2, for example), thereby reducing noise generation.

- Vehicles out of service. Petrol does not have an unlimited life; it ages. The right additive can slow down this ageing process and protect the fuel system against corrosion at the same time. This is important for cars, motorbikes and boats which are out of service for months at a time. The use of additives can also be recommended for other petrol engines such as lawnmowers and chainsaws which are not used for prolonged periods. There is also the threat of engine problems caused by the use of petrol that is past its prime and engine damage due to corrosion. In diesel vehicles that are taken out of service for prolonged periods, bacteria, yeasts and mildew can propagate in the fuel, soiling the entire fuel system and blocking the filter – the consequences are costly repair work and time-consuming and expensive tank cleaning. Antibacterial diesel additives both solve and prevent the problem: they sterilise the fuel system and stop the development of new polluting organisms.

- Oil loss. If a car is losing oil, ageing engine gaskets may be the cause of the problem. There are additives for this area of application too. They rejuvenate brittle gaskets, making them soft and smooth. This solves the problem of oil loss. These ingredients need between 600 and 800 kilometres to take effect.
- Soiled oil circuit. Over time, ash, soot and debris collects in engine oil. This is one of the reasons why engine oil has to be changed at regular intervals. These particles collect in the oil circuit and can impair lubrication or even damage the engine. Cleaning additives provide a remedy in this context. A cleaning additive is mixed in with the oil prior to an oil change following the instructions issued by the supplier. Its active cleaning ingredients loosen deposits, which are then drained

away together with the spent oil when the lubricant is changed.

- Soiled radiator. Oil residue and lime are a consequence of radiators ageing. These deposits can restrict cooling performance and cause long-term damage to the radiator. These problems can be alleviated by radiator cleaners which are simply added to coolant. After a short time, the coolant is drained away along with the loosened dirt it contains. The cleaned radiator is then topped up with fresh coolant. The cooling effect and heating performance improve as a result.

- Leaking radiators. The problem of leaks in the radiator system can be resolved with additives. Substances of this type seal minor leaks immediately and completely. Constantly topping up coolant and time spent looking for leaks are avoided as a result.

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