

ADDITIVES

Economic vehicle operation Maintaining the value of engines & transmissions



A term that most car drivers will be familiar with, but one that is often difficult to explain to them, is ADDITIVE. The dictionary definition of an “*additive*” is a supplement which improves a chemical substance. Although this is fundamentally correct, additives in the automotive sector are actually meant to do much more. On the one hand, they are intended to enhance the positive properties of base materials, and on the other hand reduce or suppress undesirable properties. Additives are also used if properties not present in the base oil or base fuel need to be achieved, e.g. in order to keep components clean. In day-to-day terms a distinction is made between fuel and oil additives.

Fuel additives for gasoline and diesel engines

Every combustion process inside an engine leaves behind tiny particles of soot. These solidify in the combustion chamber, injection nozzles, valves or injector needles and on the piston crown. This leads to poorer engine performance, greater fuel consumption and thus worse emissions. In gasoline engines, the use of fuel additives helps to ensure thorough cleaning and care of the injection system. Intake and exhaust valves must also be freed of carbon deposits.

In diesel engines, the results of an accumulation of dirt can be heard by what is known as diesel knocking. A contaminated diesel system leads to loss of performance, sooty emissions and higher pollution. Fuel additives for diesel clean and lubricate the entire system and improve the ignition quality of the fuel. The optimization in combustion that this produces boosts engine performance, lowers fuel consumption and reduces emissions. It also helps to protect the environment.



Fuel additives can be used to solve problems such as the removal of residues. When added about every 2,000 kilometers, they prevent the formation of new deposits.

Motor and gear oil additives

Mile after mile, every engine is subject to wear caused by friction between the moving parts of the engine. This shortens the life of the engine, as will be evident from fine abrasion particles in the motor oil. Observed through a microscope, it can be seen that the metal surfaces of the bearings are not really smooth, but are instead rough and fissured.



Oil additives deposit a heavy-duty lubricating film on the metal surfaces to smooth out these irregularities. One of the substances used is MoS₂ (molybdenum sulfide), a high-performance lubricant that prevents any metal contact in mixed friction areas. Molybdenum sulfide forms a thin film on the surface of the metal. This does not impair the properties of the motor oil used, but friction resistance and wear are reduced by up to 50 %. When added to gear oils, gear oil additives help to smooth out the tooth faces even of older transmissions. The benefits are quieter running, smoother gearshifts and a longer service life of the transmission.

The key benefits ...

... of fuel additives

- ✓ Clean valves
- ✓ Efficient fuel system
- ✓ Original engine performance
- ✓ Less fuel consumption
- ✓ Protects against corrosion
- ✓ Lower pollutant emissions
- ✓ Less diesel knocking

... of oil additives

- ✓ Up to 50 % less wear in the engine
- ✓ Reduced oil and fuel consumption
- ✓ Lower repair risk
- ✓ Longer operating life of engine
- ✓ Emergency and cold running characteristics

... in general

- ✓ Maintains the value of the vehicle
- ✓ Cuts operating costs!!!
(lower cost per kilometer)