

Commonly commercially available fuels are blends of a variety of compounds, principally hydrocarbons with different chemical and physical properties. To meet the demands made today with regard to fuels, the basic fuel is provided with additives during production. These additives are chemical compounds which are soluble in fuel and must be of an organic type (exception: lead organic compounds in leaded fuel) and able to alter existing properties or to add additional properties to the fuel.

These additives prevent or reduce e.g. coking of valves, deposits of combustion products in the engine and corrosion damage in the fuel system of gasoline engines. The practical properties of diesel fuel can likewise be improved with additives.

Extensive research has shown that the use of **secondary additives in gasoline and diesel fuels** for the longevity and cleanliness of engines and fuel systems, maintenance of favorable exhaust emission values as well as achieving good operational characteristics is a necessary measure which in the long term is also an economic one.

Our vehicle engines do not require such secondary additives, since in most cases uniform and adequate grades of fuel can be assumed. If in some countries diesel fuels have less favorable characteristics (e.g. high content of sulfur), the use of engine oils approved by us is particularly important. If the sulfur content in diesel fuel exceeds 0.5 % by weight, the recommended reduction in intervals between engine oil changes is far more effective than the use of secondary additives.

Special attention should be paid to making sure that only the fuel grade recommended by us is used. The use of secondary additives on the other hand, only involves additional and unnecessary expense.

In terms of the supply of such fuels, the individual customer must rely on the filling stations that he visits selling such fuels with additives; the opinion of large companies passed-on to us has shown that this is the case nationally, and is usually the case in respect of independent filling stations not tied to major suppliers. Fleet customers are usually able to ensure the supply of products with additives in bilateral negotiations; we recommend these customers to insist forcefully on such fuels.

The correct selection, application and dosing of such additives depends on detailed research in the laboratory, on test benches and in vehicles, so that the effect of the additives is optimized for the respective fuel, additives are adapted to each other and do not cause any negative side effects. Since the consumer will generally not have the required facilities for this, mixing additives to fuels may be the exclusive preserve of the manufacturers of such fuels.

However, drivers are constantly being offered fuel additives with the promise of huge success, such as higher engine output at lower fuel consumption, for example. For better distinction, we have given these additives the name of secondary additives.

The application of secondary additives is always at the sole risk of the operator of the vehicle, since their use may impair the warranty issued both by the manufacturer of the vehicle and the fuel supplier; for gasoline vehicles with catalytic converters and diesel vehicles with trap oxidizers it should be categorically avoided.

An exception to this are certain flow improvers or microbiocides. It is possible, to a certain extent, for these to improve the low-temperature properties of diesel fuel or to avoid the growth of microorganisms in diesel fuel. Only the products approved on the relevant Sheet 137.1 and 138.1, respectively, may be used. It is important to refer to the corresponding notes. Use of such additives should be regarded as an exceptional measure in the last resort.