

LUBRICANTS OF THE FUTURE (9)

NanoVit® in diesel combustion engines

In several field trials, the FSD Fahrzeugsysteme Dresden Institute tested different passenger cars with diesel combustion engines with the addition of NanoVit®. The results showed „a significant reduction in CO₂ and NO_x exhaust emissions“. The question arises as to how NanoVit® achieves these results.

The main components of NanoVit® added to the engine oil are modified nanoparticles of SiO₂ (5-10 nanometers) and Al₂O₃ (10-70 nanometers).

The aluminum oxide ensures complete cleaning of the engine from deposits and coking. At the same time, Al₂O₃ crystals are deposited on the surfaces of the combustion chamber, where they act as countless „mini spark plugs“. These „mini spark plugs“ ensure that:

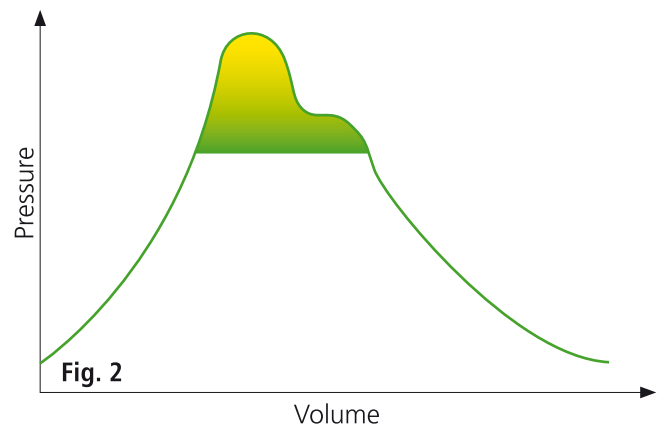
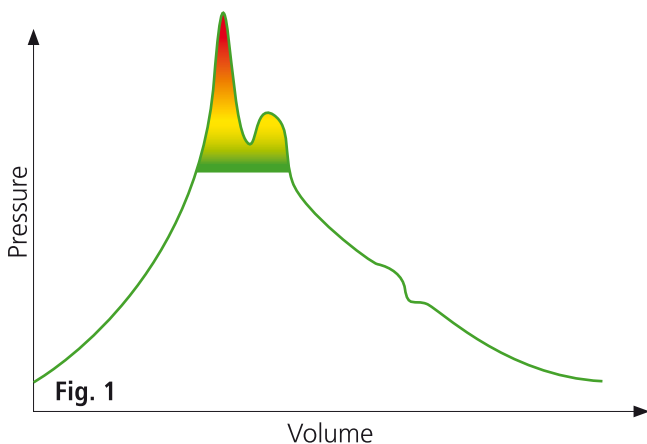
- the fuel burns completely and in a controlled manner
- the explosive peak of the maximum pressure is smoothed out
- the effective action of the gas increases

Local temperature peaks and pressure surges are reduced, and the gas pressure in the cylinder increases more quickly.

The most important thing, however, is that complete and uniform combustion of the fuel is ensured without local temperature and pressure maxima. In addition to increasing efficiency, this leads to a reduction in fuel consumption and pollutant emissions from internal combustion engines.

Vibrations decrease significantly. At the same time a three-dimensional protective layer is formed in the combustion chamber, which reduces internal friction. This results in a better combustion process (shift toward the ideal process).

The reduction of mechanical losses in the thermodynamic load range leads to a non-linear change in viscosity as well as thermal adaptation in all friction ranges. This means that friction losses are reduced and pitting and dry friction are prevented.



Durch NanoVit® ignites the fuel mixture completely and evenly (Compare Fig. 1 and Fig. 2)

Primary properties of NanoVit®:

- Thorough cleaning of the engine, especially the friction surfaces
- Modification of the friction surfaces
- Reduction of surface tension and wear
- Reduction of internal mechanical losses of the engine
- Reduction of engine oil consumption

Secondary properties of NanoVit®:

- Increase of power and dynamics of the engine
- Improved compression
- Fuel saving
- Reduction of exhaust gas pollutants
- Noise level reduction
- Economic and ecological efficiency through fuel and engine oil savings
- Reduction of service intervals and costs
- Extension of engine running time