

Test report - Cargo Vessel with a Pielstick main engine



The application of NanoVit was performed by the Ship's engineers under supervision. The main engine was a Pielstick (SEMT) 6 cylinder engine. In addition to the main engine, gear and auxiliary engines (Dong Yang China) were also treated. The data Collection was performed independently by the ship management company and Shell Lubricants.

Extensive data was collected and evaluated. The final economic evaluation is summarised below:

Oil Consumption	Reduction observed	Cost savings over 15 months (study period)
Main Engine (Shell Agina T40 oil)	10%	€3,500
Auxiliary Engine x 3 (Generic 15W40 oil)	Average 66%	€2,200

Fuel Consumption	Reduction observed	Cost savings over 15 months (study period)
Main Engine (Heavy Fuel)	18%	€200,000
Auxiliary Engine x 3 (Diesel)	Average 20%	€78,000

Total Savings over 15 month evaluation period : €283,700
Additional Savings on reduced maintenance, repair and spares costs

With the concentration of NanoVit used the engine treatment is warranted for 3 years or 15,000 hours of operation. The cost savings over 3 years would be **€688,800**.

Total Cost	€50,000	The amount of NanoVit material required is calculated based on the engine and gear oil levels (Main Engine : 5000 litres, Auxiliary Engines : 40 L, Gear 120 L)
Annual cost (over 3 year warranty period)	€16,666	
Monthly Cost (12)	€1,388	
Daily Cost (30)	€46.26	

The study demonstrated a strong economic case through cost savings. These were measured using empirical data on oil and fuel consumption, oil change frequency and reduced maintenance.

The case was additionally supported by data from oil analysis and engine output and condition measurement. The data was all independently collected and verified. The Ship management company recommended the product to the Ship owners for additional roll-out.