

7 March 2016
Press Release

Nano additives reduce mechanical wear

Nano-formulated lubricants developed by Nanotech Industrial Solutions (NIS) have been proven to enhance the life of engine oils and reduce mechanical wear, thereby complementing Techenomics International's condition monitoring and fluid management services. Techenomics has been granted exclusive distributor rights in Oceania for NanoLub® IF-WS₂ Nano-Formulated products and is also an authorised distributor of the technology in other countries in which it operates.

NanoLub's inorganic, multi-layered fullerene-like nanoparticles have dual benefits. The multi-layer tungsten disulphide nanospheres lower friction and heating, thereby reducing mechanical wear. Extreme pressure conditions cause nanospheres to create a tribofilm layer that attaches to surface crevices of metals, making them smoother, thus extending mechanical efficiency and equipment life.



Chris Adsett, CEO of
Tectenomics International

This state-of-the-art technology sits well with the Total Fluid Management Solutions provided by Techenomics, according to the company's CEO Chris Adsett. "Our oil analysis, fuel analysis, coolant analysis, and lubrication and filtration solutions are designed to predict maintenance issues in engines and hydraulic equipment before they result in costly repairs or even failure."



SOLVE YOUR LUBRICATION PROBLEMS

Click here for more detailed information on extending the life of your oil using either nano additives or micro filtration

Tests carried out by NIS on a number of oils have demonstrated the benefits of the nano additives. The 4-ball ASTM tests carried out on Castrol TLX Plus Range Diesel Engine Oil showed wear scar diameter was decreased by 20% with the use of NanoLub products. Roller-on-Block Tribotesting Machine tests showed wear scar rate was decreased by 16%. The tests compared Castrol TLX Plus oil and the same oil formulated with NanoLub DE-M6000. The recommended treat rate for this oil is 3%.

The same tests on Caltex Compressor EP VDL mineral oil showed wear was reduced by about 50% using NanoLub RCX7 at a treat rate of 3%. Tests on Caltex Delo 6130 CFO SAE 20W40 showed that NanoLub RCX7 reduced wear by about 15% and the recommended treat rate is 4%. In Caltex Delo 400 Multi 15W40 engine oil treated with NanoLub additives the wear was also reduced by about 15% at a treat rate of 4%. The 4-ball tests on Total Rubia TIR7400 showed a 16% improvement in wear over a two hour period. The longer the machine is operated with NanoLub, the better effect on wear reduction.

As well as reducing wear, Chris Adsett says the addition of the nano tungsten disulphide also results in an improvement in lubrication, as evidenced by a three month trial at an Indonesian coal project. The



nanoparticles were added to Total Rubio T177400 15W-40 diesel engine oil being used in a Komatsu HD 465-7 Dump Truck with a Cummins SAA6D 120 E-5 engine.

Engine oil life was extended by 43% from the normal 500 hours to 717 hours, and fuel consumption decreased 7% due to lower operating temperatures and reduced friction. The fuel burn rate decreased by 4.7% compared with the previous three months while engine speed increased by 3% and rear exhaust temperature decreased by 4%.

For further information about Techenomics or the nano-formulated products contact Chris Adsett, c.adsett@techenomics.com or Leo Valenz, leo.valenz@techenomics.com