BORPower®

the Holy Grail of vehicle oil has been found

Scientifically proven in the UK to improve fuel consumption by over 10%,
reduce engine wear and corrosion and save the environment.

VehicleTechnology.org Editor, Dr. Anthony McDonagh-Smith: We have seen many attempts at fuel efficiencies through the use of novel additives. This is fundamentally different, its partly a surface coating technology with a nano-crystalline morphology that fundamentally alters the chemistry and physics of the engine's operation towards greater efficiencies. Frictional events such as coincidence of the piston with the chamber appear to be altered by the use of this nano-particulate based on Boron.

Why BORPower® is different

Many will have heard of so-called 'additives', but BORPower® is different. It's the only product:

1. With publicly declared tests and certificates from around the world, performed by independent organisations showing a reduction in fuel consumption based scientific formula, approved by vehicle bodies and Governments.
2. Based upon a physical process, not involving any chemical reaction with the engine oil since it is chemically inert. BORPower® is non-toxic, non-acidic and therefore environmentally friendly.
3. Which is an all-in-one, long term solution. Other products last from 1,000 miles (liquid lubricants) to 25,000 (solid lubricants) whereas BORPower® lasts for up to 40,000 miles.

Scientifically proven to improve fuel consumption

The quality and effectiveness of BORPower® has been validated several times by accredited industrial and scientific research and testing facilities in the USA and Europe and now in the UK.
Each facility, including Southwest Research Institute San Antonio Texas, USA and TÜV NORD, Germany (Technical Inspection Agency), Hanover found that BORPower® improved fuel efficiency by up to 15%.

In the recent independent UK tests at the MIRA Vehicle Test Track (October 2008), Roger Dennis, (independent mechanical engineer and specialist fleet efficiency consultant [ref 4]) found a saving of over 10% on a three-axle 21 tonne flatbed for the high speed track trial simulating highway driving and over 11% for the low speed track trial simulating heavy traffic scenarios [ref 5].

How BORPower® works

BORPower® combines the use of the chemical element boron and nanotechnology. Nanotechnology is the relatively unknown, but growing field dealing with the tiny world of atoms and molecules. One nanometer (nm) is one billionth, or 10-9 of a metre.
To put that scale into context, the comparative size of a nanometer to a metre is the same as that of a marble to the size of the earth. Within the periodic table, Boron has the symbol B, atomic number 5, a small density and is very heat resistant.

The raw boron goes through the nanotechnology process and becomes boron diamond powder (MCDP), frequently called the 'Brother Of Diamond' due to its hardness, scoring 9.3 on the Mohs scale of hardness. It ranks just below diamond (10 Mohs), the hardest substance known to man.

BORPower® works by building up boron metal films in the engine's inner parts which prevents direct contact between the frictional surfaces responsible for abrasion, friction and heat. BORPower® helps by cooling down these frictional surfaces and sealing them.
BORPower® contains two active ingredients: boron diamond powder (MCDP) and nano boron. Under high pressure between two metal surfaces, the MCDP crystals are pressed into the material to form a coating. This coating is near diamond-hard, but at the same time very slippery.

The nano boron forms a low-friction, solid lubricant film between these coatings. MCDP not integrated into the metal surface act also like tiny ball-bearings, which further reduces friction and abrasion by transforming the sliding friction into much less abrasive rolling friction.

To put this into context, the MCDP crystals are 5 nanometres in diameter or one 20,000th diameter of a human hair!

The benefits of BORPower®

Cutting fuel costs isn't the only benefit of BORPower®. The overall benefits can be much greater for the individual, company and the planet:

Cutting costs

1. Extended engine life span (up to 100%)
2. Reduced maintenance costs
3. Prolonged service intervals

Increased efficiency

1. Improved engine power (up to 9%)
2. Reduced oil temperature (up to 30%), lower burn-up and degradation of the motor oil
3. Less engine wear
4. Reduced corrosion & friction

Saving the environment

1. Less CO_2 emissions (up to 15%)
2. Reduced oil waste
3. Non toxic, non acidic, chemically inert
4. Quieter engine noise

Announcing the launch of BORPower® in the UK, NanoBoron UK director Mr Ismail Cikci said: “In today's volatile financial markets, businesses need to save every penny they can to remain competitive.

“After comprehensive trials across the globe, we are the only company to publicly declare independent test results which confirm that BORPower® works to save money and the environment. The recent tests at MIRA confirm our standing as world leaders in lubricant technology.”

Where to buy BORPower

Visit www.nanoboron.co.uk or call the order line on 0845 463 5438
For more information please contact Julian Fisher (01543 258182 or 07970 715809) or Beth Richmond (07989 785286) at Townhouse Communications. Or visit www.nanoboron.co.uk.

Product cost and availability

1. BORPower® S-250. Applicable to all vehicles with 4-stroke engines; with engine oil capacity of up to 5 Litre: cabs, cars - £50 (inc VAT)
2. BORPower® S-600. Applicable to all vehicles with 4-stroke engines; with engine oil capacity between 6 and 18 Litre: vans, pick-ups, buses, lorries, coaches, trucks, 4 x 4s - £75 (inc VAT)
3. BORPower® is already available in 20 countries

References

[ref 1] theAA.com October 2008 average fuel cost report
[ref 2] Multimap.com from official London centre to Edinburgh centre via the 'quickest route'
[ref 3] Transport Engineer Magazine, IRTE, January 2008
[ref 4] Roger Dennis, CEng, FIMechE, HonFSOE, HonFIRTE of Lorry Logic. Independent mechanical engineer and specialist fleet efficiency consultant. BORPower® tests carried out during October 2008 at MIRA, Nuneaton, Warks.
[ref 5] Test methodology.

1. A simple, three axle, well used 21 tonne gross vehicle weight with a flatbed body was selected for the trial. This vehicle had a well documented operational history and had just satisfactorily passed its annual Ministry of Transport Test.
2. The vehicle was then run on normal service operation with load details, mileage, fuel consumed and weather conditions recorded.
3. The vehicle was then carefully scrutinised for any defects likely to affect the running efficiency, and fitted with a detachable fuel tank. A load of 9.170 tonnes was then carefully positioned and secured on the vehicle's flat bed. The position of the load was documented to enable an identical load to be applied at the time of the second test track run at a later date.
4. The loaded vehicle was then run a distance of over 50 miles to the test tracks at the Motor Industry research Association (MIRA) and a professionally qualified MIRA test driver carried out an IRTE/BTAC (Institute of Road Transport Engineers/British Transport Advisory Consortium) Type 1 test described below. (This was before the BORPower® additive was added)

The IRTE/BTAC Type 1 test basically comprises:

i. Weighing the vehicle on a weighbridge and recording both Individual axle weights in addition to the gross vehicle weight as tested.
ii. Running the vehicle around the MIRA 4.459 km high speed circuit to ensure that normal engine and transmission temperature had been achieved.
iii. Stopping at an identified start / finish line just off the track where the weight of the fuel in the test tank is recorded together with the fuel's temperature and specific gravity.
iv. The vehicle was then driven five laps of the high speed circuit at 60 km / h (37 mph) then five laps at 80 km / h (50 mph) and 5 laps at the vehicle's maximum speed 90 kmh (56 mph).
v. The vehicle is then returned to the start / finish line where the weight of the detachable test tank is weighed and the temperature recorded.
vi. The second part of the standard test procedure is then commenced on the No Two circuit also called the inner durability3.8 km circuit basically to simulate a stop start operation as opposed to a motorway or trunk road operation.
vii. Here the vehicle completes 5 laps at 50 km / h (31 mph) stopping at the end of each lap before the start of the next lap.
viii. Then running another 6 laps stopping at positioned marker cones. Two stops at 32 km / h (20 mph) and four 48 km / h (30 mph) stops.
ix. The vehicle then returns to the stop / start line where the detachable fuel tank is weighed to determine the amount of fuel used. The temperature of the fuel is again recorded to enable the specific gravity of the fuel to be corrected and the accurate amount of fuel calculated in terms of volume.
x. Following the first IRTE / BTAC track test on the 4th October, the vehicle had an engine oil and oil and fuel filter service.
xi. The engine was then fed with the BORPower® additive in accordance with the instructions indicated on the BORPower® container. The vehicle was then put into normal service with the fuel consumption was again carefully recorded.
xii. Having completed an additional 815 kms (505 miles) after the BORPower® additive had been added, of normal over the road type operation, the vehicle was returned to MIRA for an identical IRTE / BTAC Type 1 fuel evaluation.
xiii. The results of this second IRTE / BTAC Type 1 evaluation performed on the 9th October 2008 were recorded and carefully compared with those recorded on the first evaluation of the 4th October 2008.

Summary of Results.

Prior to addition of BORPower® additive: On the 4th October the following test results were recorded:

IRTE / BTAC Type 1, part 1, Test high speed: 11.35mpg at average speed of 45.20 mph.

1IRTE / BTAC Type 1, part 2, Stop start circuit: 9.72 mpg at an average speed of 22.9mph

Average of part 1 and 2: 10.73 mpg at an average speed of 33.85 mph ##

After addition of BORPower® additive: On the 9th October the following test results were recorded

IRTE / BTAC Type 1, part 1, Test high speed: 12.516 mpg at an average speed of 44.4 mph.

IRTE / BTAC Type1, part 2, Stop start circuit: 10.825 mpg at an average speed of 22.825 mph

Average of part 1 and 2: 11.88 mpg at an average speed of 33 mph ##

Recorded and observed improvement in fuel consumption following the application of BORPower® additive.

IRTE / BTAC type 1 test high speed: 10.274% improvement

IRTE / BTAC type 2 stop start circuit: 11.36% improvement

Average of part 1 and part 2: 10.817% improvement ##

The average has been calculated on the total distances covered and the fuel consumed on each of the Type 1 Evaluations carried out on the 4th and 9th October 2008. That is the fuel consumed and the distance covered during part I of each test plus the fuel consumed and he distance covered during part 2 of each test.