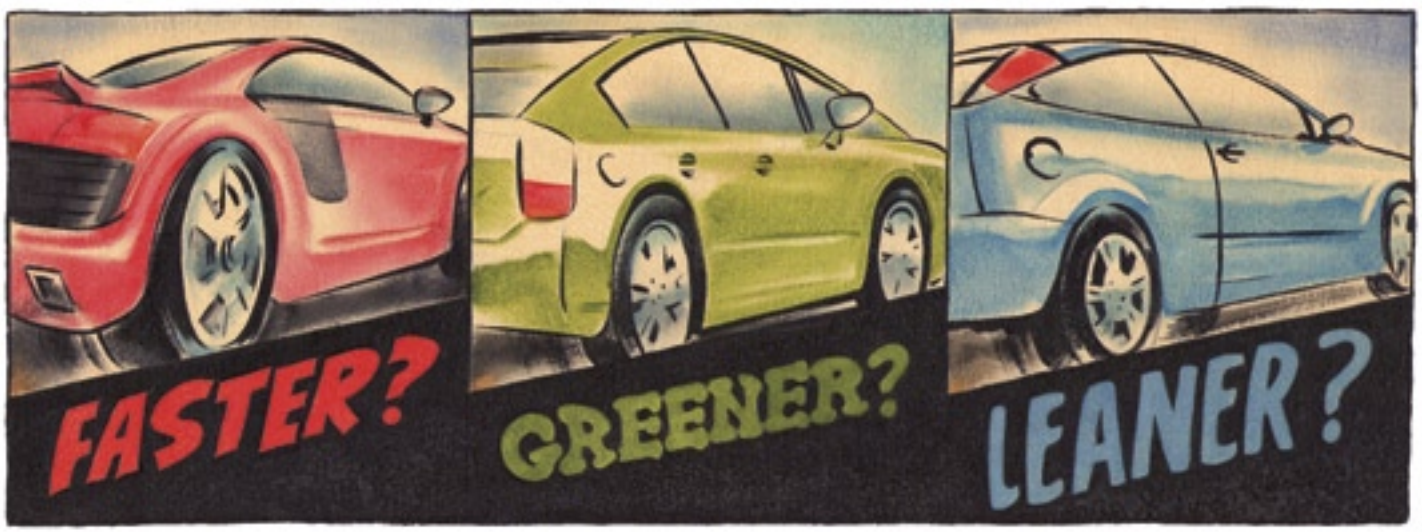


Do fuel additives add up?

Which? investigates 'miracle' car fuel boosters to see if any will really add more oomph to your tank of petrol or diesel

Do you feel like your tired old car could do with a bit of extra pep? Whatever the reason for considering fuel additives, there's no doubt that some of the products sound inviting. And certainly some of the manufacturers' claims, such as 'increases power' and 'improves economy', can seem very tempting indeed at the right price.

On the shelves, the array of products is vast, with prices per bottle varying from just under a fiver to about £20. So which, if any, should you choose?

Regardless of the price on the bottle, the true cost isn't clear cut because the amount of each additive needed to treat a litre of fuel varies hugely between brands. In fact, choosing some brands can push up the cost of filling your tank by almost 50%. So are the actual benefits worth the extra spend?

We put a selection of fuel additives for both petrol and diesel engines to the test at our laboratory to find out whether the claims can be justified – and, in most cases, the answer is no. While some additives did make slight changes to power, torque or exhaust emissions, none of them were significant enough to result in noticeable improvements.

PHOTOGRAPHY MATT FOWLER, ILLUSTRATION VINCE MCINDOE

IN BRIEF

In this report we help you to:

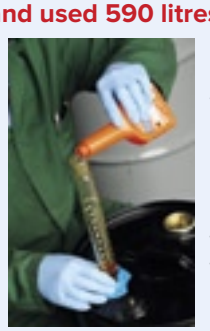
- decide whether fuel additives are worth the money
- find out if fuel additives live up to their claims

WHICH.CO.UK

Watch our testing video and find out more about our tests at
www.which.co.uk/fueladditives

How we test

We drove 1,528 miles and used 590 litres of fuel



We tested four diesel and five petrol additives against manufacturers' claims for engine power, torque (pulling power), fuel economy and exhaust emissions.

We measured the effect each had on the fuel combustion characteristics by logging the octane number (petrol) and cetane number (diesel) of the raw fuel and the fuel plus additive. The higher the octane number (RON), the better the petrol is at resisting pre-ignition (pinking). The higher the cetane number, the more easily diesel burns under compression.

We mixed each additive with raw fuel in the stated doses, and sent samples of the raw fuels and the 'enriched' fuels for lab analysis.

The additives we tested claimed to be suitable for all diesel or petrol cars, so we tested them on a 2005 Vauxhall Vectra 1.9 CDTi (diesel) with around 25,000 miles on the clock and a 1998 Mazda MX-5 1.8i Sport (petrol) with 50,000 miles recorded. We ran them on a 'rolling road' replicating urban and motorway driving. First, we ran them on 'raw' fuel to collect baseline data for economy, power, torque, acceleration and emissions. Each test was repeated three times (10 times for power tests). After pouring in the additive and after suitable conditioning, we ran the same tests again to check for differences against the raw fuel.

To work out the extra cost of using each additive, we used the following pump prices:

Pump prices*	per litre	per tank
Regular unleaded	104.6	£62.76
Super unleaded	111.3	£66.78
Regular diesel	105.2	£63.12
Premium diesel	110.6	£66.36

*Prices from mid-August, assuming an average 60-litre tank

Petrol additives

STP Power Booster (250ml) £4.99

IT CLAIMS ■ Increases octane rating ■ Restores lost horsepower (power booster) ■ Treats 60 litres

WE SAY It didn't boost the power and only slightly increased the octane rating. It costs more than using super unleaded, but with no perceivable power or economy benefits.

FINDINGS ■ **Cost per treated litre of regular unleaded:** £1.13 ■ **Extra cost per tankful:** £4.99

OCTANE: ↑ up by 0.9 numbers
POWER, TORQUE and FUEL ECONOMY: no significant change

Wynn's Supremium (250ml) £5.99

IT CLAIMS ■ Upgrades your fuel to premium fuel ■ Reduces fuel consumption ■ More engine power ■ Reduces noxious exhaust gases by up to 30% ■ Treats 250 litres

WE SAY It decreased the octane rating. It costs less than using super unleaded, but we'd be surprised if you could sense the performance benefits. **IS IT WORTH IT?** Probably not

FINDINGS ■ **Cost per treated litre of regular unleaded:** £1.07 ■ **Extra cost per tankful:** £1.44

OCTANE: ↓ down by 0.4 numbers
POWER: ↑ up by 1.6% **TORQUE:** ↑ up by 1.4%
FUEL ECONOMY: no significant change

Redex 0 To 60 Octane Booster (500ml) £9.99

IT CLAIMS ■ Increases octane number of petrol by up to 1.5 numbers ■ Also increases fuel economy ■ Reduces exhaust emissions ■ Treats 50 litres

WE SAY The small power and torque increases don't justify the cost – nearly three times the extra you'd pay by filling up with super unleaded. **IS IT WORTH IT?** No

FINDINGS ■ **Cost per treated litre of regular unleaded:** £1.25 ■ **Extra cost per tankful**: £11.99

OCTANE: ↑ up by 0.9 numbers
POWER: ↑ up by 4% **TORQUE:** ↑ up by 5%
FUEL ECONOMY: no significant change

Nitrox Hot Shot Power Boost (500ml) £7.99

IT CLAIMS ■ Improves bhp by up to 10% ■ Reduces emissions by up to 90% ■ Faster acceleration ■ Treats 15 litres

WE SAY The most expensive on test but with no tangible benefits – acceleration was no faster and changes to emissions were insignificant. **IS IT WORTH IT?** No

FINDINGS ■ **Cost per treated litre of regular unleaded:** £1.58 ■ **Extra cost per tankful:** £31.96

OCTANE: ↑ up by 1.2 numbers
POWER, TORQUE and FUEL ECONOMY: no significant change

NOS Octane Booster – Street Formula (355ml) £9.99

IT CLAIMS ■ Increases octane effect up to three points ■ Treats 60 litres

WE SAY It increased the octane rating, but not by anywhere near the maximum amount suggested. Small changes to emissions had no effect on fuel consumption. It costs more than super unleaded and we'd be surprised if you notice a difference. **IS IT WORTH IT?** No

FINDINGS ■ **Cost per treated litre of regular unleaded:** £1.19 ■ **Extra cost per tankful:** £9.99

OCTANE: ↑ up by 0.4 numbers
POWER: ↑ up by 1.2% **TORQUE:** ↑ up by 2%
FUEL ECONOMY: no significant change

Which? says

You may be tempted to try some of these additives in an attempt to perk up your car's performance, improve its economy or reduce exhaust emissions.

But the fuel additives we've tested seem very unlikely to return noticeable improvements in power, economy or emissions. And, like the premium fuels that we tested last year (p64-66 *Which?*, October 2008), they're generally not worth the extra money.

If your car seems lacklustre, thirsty or smoky, try giving it a good motorway run (at least 50 miles) to clear the cobwebs and hopefully jolt the car's electronic control unit (ECU) out of 'urban mode'.

If this doesn't work, you may have a problem with the car, in which case don't rely on fuel additives – get advice from a reputable garage.

PHOTOGRAPHY ALAMY, JOHN TRENHOLM

Diesel additives

Millers Diesel Power Sport 4 (500ml)* £11.99

IT CLAIMS ■ Increases cetane by up to four numbers ■ Increases power – up to 17.5% more bhp ■ Increases mpg by up to 7% ■ Reduces exhaust emissions – 70% less smoke, 20% less carbon ■ Treats 500 litres of diesel
WE SAY Cetane was up, but it offers no power or economy benefits. **IS IT WORTH IT?** No
FINDINGS ■ **Cost per treated litre of standard diesel:** £1.08 ■ **Extra cost per tankful:** £1.44

CETANE: ↑ up by 3.5 numbers
POWER, TORQUE and FUEL ECONOMY: no significant change

*Since our tests, Millers has announced a new product called Millers Diesel Power ECOMAX. The claims are similar, but it may have different effects on performance. Diesel Power Sport 4 is still on sale.

Wynn's Supremium Diesel (250ml) £5.99

IT CLAIMS ■ Reduces fuel consumption ■ Increases engine power ■ Reduces noxious exhaust gases by up to 20% ■ Cetane improver ■ Treats 250 litres of diesel
WE SAY It does improve the cetane rating and costs less than filling up with 'premium' diesel. But we didn't measure any tangible benefits. **IS IT WORTH IT?** No
FINDINGS ■ **Cost per treated litre of standard diesel:** £1.08 ■ **Extra cost per tankful:** £1.44

CETANE: ↑ up by 2.9 numbers
POWER, TORQUE and FUEL ECONOMY: no significant change

Redex 0 To 60 Cetane Booster (500ml) £9.99

IT CLAIMS ■ Increases the cetane number of diesel fuel by up to two numbers ■ Increases fuel economy ■ Treats 50 litres of diesel
WE SAY It did boost the cetane rating and reduce carbon monoxide (CO) and nitrogen oxide (NOx) emissions on the motorway. But it costs nearly £12 per tankful, and with no signs of the promised fuel economy benefits.
IS IT WORTH IT? No
FINDINGS ■ **Cost per treated litre of standard diesel:** £1.25 ■ **Extra cost per tankful:** £11.99

CETANE: ↑ up by 1.2 numbers
POWER, TORQUE and FUEL ECONOMY: no significant change

PD-5 Fuel treatment (250ml) (tested in diesel) £18.50

IT CLAIMS ■ Increases engine power (power booster) ■ Reduces fuel consumption (economiser) ■ Works with both petrol and diesel ■ Treats 1,000 litres
WE SAY It's cheaper than using premium diesel, but we don't think you'll notice the marginal torque and cetane increase we found. **IS IT WORTH IT?** Probably not
FINDINGS ■ **Cost per treated litre of standard diesel:** £1.07 ■ **Extra cost per tankful:** £1.11

CETANE: ↑ up by 1.4 numbers
TORQUE: ↑ up 1.7%
POWER and FUEL ECONOMY: no significant change

Checklist

Our tips for getting optimum performance from your car

■ Don't waste money on fuel additives.
■ Use the type of fuel recommended in your car's handbook. If this is premium fuel, that's the option to choose – otherwise using ordinary fuel should be fine.
■ Regularly service your car in line with the manufacturer's instructions.
■ Carry out fortnightly checks on tyre pressure and engine oil level – if these are low, they can reduce your car's performance.
■ If you do low mileage, go for a motorway drive once a month to clear the cobwebs and maintain the system settings.

■ Avoid running on empty. Apart from the risk of drawing debris from the bottom of the tank into the system, many cars now have the fuel pump inside the fuel tank, so the fuel keeps the pump cool. Running near empty may cause the pump to run hotter than it should.
■ Regularly check under your bonnet to make sure debris such as fallen leaves hasn't been sucked into the air intake. This can clog the system, change the engine settings and upset your ECU. It's a particular problem in autumn and winter.
■ Keep an ear open for a blowing exhaust. This can upset your engine's settings and cause it to run inefficiently.
■ Carrying extra weight uses extra fuel – so clear out your boot regularly.