



Tuning to get the most from Opal

A Guide for Carburetted Cars

Introduction

Opal is a non sniffable 91 grade fuel for spark ignition engines that is primarily used where petrol sniffing is a problem within the wider community. The fuel meets all of the current federal and state determinations for unleaded 91 RON fuel. It has very low to zero aromatic compounds that are believed to be associated with the narcotic effects of sniffing petrol. While Opal can be used as a direct substitute for vehicles that can use regular 91 RON pump fuel, some tuning may be required to optimise performance. This guide is intended for on going use in the automotive industry involved with tuning older carburetted vehicles that use Opal.

Vehicle Requirements

Opal is for use in spark ignition vehicles manufactured after 1986 that have a research octane requirement of 91. Always consult the manufacturer's hand book to determine the correct octane requirement. Of the vehicle.

Tuning Considerations

Mixture

When compared to regular unleaded petrol, Opal has a slighter higher oxygen requirement, so without mixture adjustment or a signal from a feed back device such as an oxygen sensor the combustion will tend to be on the rich side (even when the density is taken into account). This means a cooler burn, approx 20 °C at the exhaust manifold for the same given air to fuel ratio. This can be easily compensated for by leaning the mixture slightly. Ideally this should be done with an exhaust gas analyser. This will allow for better torque and offset some of the possible increase in fuel consumption when used with the same carburettor settings as regular ULP. Opal's narrow distillation allows for excellent mixture preparation by allowing all components to vapourise more evenly. This promotes the formation of an even air fuel mix and will promote smooth idle and acceleration when the carburettor is tuned correctly.

Hot Starts

Opal offers a significant advantage in hot starting carburetted vehicles; this is due to its strong anti vapour lock performance which reduces fuel volatilisation in the carburettor bowl.

Cold Starts

Opal is less volatile and in some engines you may experience increased cranking times with very cold temperatures. If this is a problem check that the choke is correctly operating and that the mixture is correctly adjusted.

Engine Timing

Engine timing need not be set to anything other than factory standard.

Spark Plugs

Normal spark plugs as specified by the engine manufacturer work fine..

Fuel System Components

No special hose or pump materials are required, compatibility testing on fuel system components show that the fuel does not affect fuel system materials.

Opal Typical Properties

| PROPERTY | TYPICAL VALUES |
|-----------------------------|-----------------------|
| Octane | 91-93 |
| Sulphur | Below 50 ppm |
| Benzene | Below 1 % vol |
| Total aromatic content | Below 5 %vol |
| Vapour Pressure at 40 deg C | Above 45 kPa |
| Colour | YELLOW |

**For further information, please call the
BP Lubricants and Fuels Technical Helpline
1300 139 700
Local Call**