

Product Information

RF100 Leaded Racing Racing Fuel

RF100 is sourced from **BP Australia Limited** A.C.N. 004 085 616

DESCRIPTION

RF100 Racing Fuel is a high octane leaded petrol for use in certain types of high compression engines. This fuel is for racing and recreational use only. This fuel does not comply with the requirements of the Federal and State regulations covering petrol because it contains lead and may only be supplied for use in legitimate motor or water sport activities, to an individual who has been issued with and presents a valid and current motor or water sport licence and photographic identification. It is illegal to use RF100 on the open road unless approval has been obtained for its use in a vintage vehicle in a recognized racing event.

COLOUR

The colour of RF100 may be blue or green, the blue colour indicates that the product has a lower lead content. Both blue and green fuels have the same minimum octane of 100 motor octane number and similar typical research octane of 104 to 106. The green colour is being phased out and only blue is expected to be available from 2016.

OCTANE

Because racing 100 is made to a minimum RON and MON numbers it follows that individual batches will have higher octane numbers and these will vary from batch to batch therefore care should be used when tuning a vehicle to the limit on one batch of fuel because the next batch used may be different and may be lower octane, although it will always be above 100.

STORAGE

RF100 will last for up to one year when stored in approved sealed containers, when the seal is broken then the storage life is reduced due to the potential loss of light components which will cause hard starting and uneven running. This may become evident after one month in storage, old fuel can be refreshed by the addition of some fresh fuel to restore the light components that help in starting.

SAFE HANDLING

RF100 is petrol and should be stored and handled as petrol or other flammable liquids. If any is spilled then removed any sources of ignition and use an absorbent material to absorb the liquid. Remove the absorbent material to a safe place for disposal . refer to Material Safety Data sheet.

WATER SPORTS

RF100 does not contain the fuel octane component MTBE and therefore it can be used on waterways. Fuels with more than 1% of MTBE should not be used on or near freshwater lakes and waterways for environmental reasons.

PROPERTIES

Octane

RF100 has a minimum motor octane of 100, which will give a research octane of at least 104 to 108 (the highest RON for unleaded petrol is 98). The terminology 100/130 is sometimes applied to racing fuel of this type and relates to octane measured under different engine conditions. The lowest number refers to octane measured by a lean mixture test (100 minimum) and the highest to octane measured by a supercharged rich mixture test (130 minimum). The supercharged rich mixture result is only applicable to aviation conditions.

Air-Fuel Ratio

The best air/fuel ratio is the same as for other petrols. Maximum power is produced at around 12 to 1 and ignition timing also stays the same. Ideally for best performance and engine durability, modified engines should be dynamometer tested.

Volatility

The low volatility of RF100 gives excellent resistance to vapor lock in the hot environment in which many racing engines operate. However, low volatility may cause difficult starting and warm up during winter.

APPLICATION

RF100 is used to power modified high compression engines used in cars, motor cycle and speed boat racing which require a fuel with greater octane than that of unleaded petrol.

The maximum safe compression ratio for naturally aspirated engines varies with design and application. When modifying engines to maximize power, care should be taken not to increase compression ratios so that detonation occurs.

Typical limits are:

- For engines using a wide speed range, such as those used in road racing, 12.5 to 1 for 1.3 liter engines down to 11.5 to 1 for 5 liter engines.
- For racing boat engines, which tend to operate at constant high speeds which are above the critical detonation range, around 13 to 1 compression ratio.

AVAILABILITY

RF100 can be ordered in 20L drums through most RaceFuels agencies with notice for use in vehicles participating in racing events only. RF100 should not be used for public highway driving because the lead content exceeds legislated requirements.

TUNING

The Octane of RF100 is 100 minimum but can vary from 104 to 108. Therefore when tuning engines with a drummed fuel always allow for this variation.

TYPICAL CHARACTERISTICS Property	Units	Typical
Air/Fuel ratio: maximum power (approx) Stoichiometric		12 : 1 15 : 1
Appearance		Clear and bright
Density at 15 deg C	kg/L	0.69 – 0.73
green	kg/l	0.69 to 0.71
blue	kg/l	0.71 to 0.73
Energy content – net by volume by mass	MJ/L MJ/kg	30.2 43.5
Research Octane Number Motor Octane Number		108 Max 100 Min
Oxygen content	%	0
Reid vapour pressure	kPa	45
Lead content	g/L	0.5