



Tech Bulletin

World Leader in Race Fuel Technology™

Tech Bulletin prepared by Vince Colagiuri

ProStock Xtreme HORSEPOWER IN A CAN!

PSX-AU -- VP Racing Fuels Australia are proud to announce that we have continued to advance the science of motorsport with the formulation of PSX-AU. This specialized fuel has been blended to suit the needs of high rpm, naturally aspirated drag racing engines with compression ratios above 12.0:1 (not suitable for nitrous, blower or turbo applications and long endurance racing where there is a buildup of mechanical heat). Tested and recommended by Book Racing Enterprises PSX-AU is a highly oxygenated leaded race fuel that has been proven to outperform our own Roo25 Plus with average horsepower and torque gains of up to 1.5%. Approved by ANDRA for use at sanctioned events PSX-AU is ideal for use in Australian Pro/Super Stock and comp eliminator or drag racing outlaw classes.

TUNING SUGGESTIONS – Engines already tuned on Roo16, MS109, DINGO or Roo25 Plus switching over to PSX-AU will need a 15-18% increase in fuel flow (these tuning suggestions are based on ambient air temperatures being 70 – 75 degrees F and engine operating water temperature of 100 – 110 degrees F and no airbox boost supplied to carburetors). Suggested target lambda of .84 at peak torque and .87 at peak horsepower. If air temperature exceeds 100F increase fuel flow 1.5%, if air quality improves increase fuel flow accordingly. **Note** PSX-AU is sensitive to manifold temperature and we strongly recommend not using any projected tip spark plugs with PSX-AU. In almost every case extensive carburetor modifications will need to be made to use PSX-AU, VP Racing Fuels Australia recommend the use of Book Racing

Enterprises PSX-AU tailor built carburetors to cope with the increased fuel demand. Consult with VP racing Fuels Australia and your carburetor manufacturer prior to using PSX-AU. **Note** All tuning suggestions are to be used as a guideline as not all applications are the same, fine tuning and individual R&D will be required for each application in order to use PSX-AU. Dyno testing and tuning is required in all applications when using PSX-AU prior to being used in race vehicles.

“most powerful race gas I’ve used in any naturally aspirated race engine” Bob Book BRE

To purchase or for more information on PSX-AU contact:

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Or visit: www.vpracingfuels.com.au

Property/ Typical Values	PSX-AU
Specific Gravity @ 60F°	.741
OXYGENATED	YES
Color	BLUE
RESEARCH OCTANE	116.5
MOTOR OCTANE	110.5
LEADED	YES

The four most important properties of racing fuel

You can't make a racing fuel that has the best of everything, but you can produce one that will give your particular engine the most power. This is why we produce different fuels for different applications. The key to getting the best racing gasoline is not necessarily buying the fuel with the highest octane, but getting one that is best suited for your engine.

1. **OCTANE** – This is simply the rating of a fuel's ability to resist detonation and/or preignition. Octane is rated in Research Octane Numbers (RON), Motor Octane Numbers (MON), and Pump Octane Numbers (R+M/2). Pump Octane Numbers are what you see on the yellow decal at the gas stations and represents an average of RON and MON. VP reports MON ratings because this method tests a fuel's performance under a heavier load than the RON method, thus better simulates racing conditions. Most other companies use RON because it sounds better in marketing messages. Don't be fooled by high RON numbers or an average—MON is the most relevant for a racing application. However, a fuel's ability to resist preignition is more than just a function of octane.

2. **BURNING SPEED** - The speed at which fuel releases its energy. In a high-speed internal combustion engine, there is very little time (real time - not crank rotation) for the fuel to release its energy. Peak cylinder pressure should occur around 20° ATDC. If the fuel is still burning after this, it is not contributing to peak cylinder pressure, which is what the rear wheels see.
3. **ENERGY VALUE** - An expression of the potential in the fuel. The energy value is measured in BTUs per pound, not per gallon. The difference is important. The air:fuel ratio is in weight, not volume. Remember, this is the potential energy value of the fuel. This difference will show up at any compression ratio or engine speed.
4. **COOLING EFFECT**: The cooling effect on fuel is related to the heat of vaporization. The higher the heat of vaporization, the better its effect on cooling the intake mixture. This is of some benefit in a four-stroke engine, but can be a big gain in two-stroke engines.