



## PRODUCT INFORMATION SHEET

Page 1 of 4 43806 WYNN'S PROFESSIONAL OCTANE BOOST  
Date of Issue July 2012

### WYNN'S PROFESSIONAL OCTANE BOOST

Product Number: 43806 24 x 325ml

WYNN'S Professional OCTANE BOOST is a specifically formulated, non-leaded fuel additive for petrol engines that increases the octane number of any grade of petrol used. It provides a noticeable improvement to engine power and performance and delivers upper cylinder lubrication (valve seat recession protection) in the process.

#### Introduction

Modern engines are designed with higher and higher compression ratios which demand higher Octane Number fuel. The Octane number is often referred as Research Octane Number (RON). If a lower than required RON fuel is used, the engine can have pinging or detonation problem due to auto-ignition.

Petrol engine pinging (knocking) causes severe damage to an engine. Prolonged pinging and detonation can cause loss of power, poor fuel economy, engine overheating, and worst of all, severe engine damage such as hammered bearings or damaged pistons. One cannot always tell that a vehicle is suffering pinging/detonation. Inaudible detonation can be impossible to detect by ear. Dynamometer tests show that inaudible detonations will cause loss of horsepower and loss of ring sealing.

Late model cars with knock sensors can retard their spark advance and inject additional petrol to suppress detonation, but this reduces power and increases fuel consumption.

#### Advantages

Wynn's Professional Octane Boost will overcome these engine knocking problems with whatever grade of petrol is used – unleaded (ULP), premium unleaded (PULP), or E10 petrol.

In addition, even correct RON fuel is used, adding Wynn's Professional Octane Boost will also enable the engine to deliver extra horsepower, as a more complete combustion is achieved.

Lead in leaded fuel was more than an octane enhancer, it was a lubricant too. And when that lubricating protection was part of every tankful of leaded petrol, most passenger vehicles were engineered with "softer" less wear-resistant valve-seats.

Today, many of those older "lead-age" cars are still on the road. But with the loss of lead lubrication, their exhaust valves can stick to the valve seating – pulling away small metal particles that oxidise and, in turn, wear away more and more of the seating every time the valve closes.

Wear of the valve seating – or valve-seat recession (VSR) can lead to increased exhaust emissions, poor idling, and a loss of power. And since precise valve-to-seat contact is needed for proper valve cooling, VSR can also result in valve burning and in rare cases, - catastrophic engine failure.

The potential for VSR increases with smaller engines running at higher speeds. So as more of the fast-paced world makes the change to unleaded petrols, Wynn's Professional Octane Boost is the smart solution to deliver both high-octane performance and valve-seat recession protection, which is also referred as upper cylinder lubrication.

**ITW AAMTech, A division of ITW Australia Pty Ltd, 100 Hassall Street, Wetherill Park NSW 2164**  
**Tel: (02) 9828 0900 Fax: (02) 9725 4698 [www.wynns.net](http://www.wynns.net) [www.wynns.co.nz](http://www.wynns.co.nz)**

The data concerning properties and applications of the indicated products are offered in good faith and are based on our research and practical experiences. Due to the versatility of the application possibilities, it is impossible to mention all details and we do not assume any obligations or responsibilities resulting from this. When a new edition appears due to technical development, the preceding data is no longer valid



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## Benefits

Wynn's Professional Octane Boost has been formulated to provide the following benefits;

- Improves engine performance & acceleration
- Increases Research Octane Number (RON) by up to 5 units
- Improves fuel efficiency
- Provides upper cylinder lubrication
- Stops pinging of petrol engines
- Avoids mechanical damage caused by pinging (engine knocking)
- Prevents valve seat wear
- Helps reduce intake valve deposits
- Safe for catalytic converters & oxygen sensors
- Safe for use in turbo-charged engines

## Applications

- Recommended for use in all grades of petrol – leaded & unleaded
- Improves engine performance & acceleration immediately
- One 325ml bottle treats most standard petrol vehicles

## Performance Tests

### ➤ OCTANE ENHANCEMENT

To test the effectiveness of WYNN'S Professional OCTANE BOOST on Research Octane Number (RON), various grades of petrol were treated at different dose rates.

The untreated and treated grades of petrol were evaluated and tested to the Standard ASTM D 2699.

ASTM D 2699 RESEARCH OCTANE NUMBER			
<u>RON Before Treatment</u>	<u>Improvement After 325ml 43806 Wynn's Professional Octane Boost</u>		
<b>Petrol:</b>	<b>40 Litres</b>	<b>60 Litres</b>	<b>80 Litres</b>
91.0	+3.6	+2.8	+2.3
92.0	+3.3	+2.6	+2.2
95.0	+2.7	+2.1	+1.8
96.0	+2.5	+2.0	+1.7

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<u>UNLEADED PETROL (ULP)</u>	AUSTRALIAN STANDARD TYPICAL	91.0 MIN 91.7-92.7
<u>PREMIUM UNLEADED PETROL (PULP)</u>	AUSTRALIAN STANDARD TYPICAL	95.0 MIN 95.0-98.0

➤ **VSR PROTECTION**

Results from independent CLH testing of a “critical” European engine shows just how dramatically WYNN'S Professional OCTANE BOOST can reduce valve-seat recession (VSR).

WYNN'S Professional OCTANE BOOST	VALVE RESSION WEAR (mm/1000hrs)
UNTREATED UNLEADED PETROL	3.7
MINIMUM DOSE RATE	0.2
MAXIMUM DOSE RATE	0.1

High engine speeds and severity of operation increase the protection required against valve-seat recession. Most vehicles will operate satisfactorily in normal conditions but will be stretched as conditions become more severe.

Wynn's Professional Octane Boost provides the opportunity to treat sufficiently for the most severe operation.

The following table is a brief comparison of this product against two similar products in the market.

PROPERTY	WYNN'S Professional OCTANE BOOST	COMPETITOR N	COMPETITOR S
Chemistry	Manganese based	Manganese based	Manganese based
Indicated rise of RON on 91RON fuel to	94.6	93.5	Not given
Cleaning action claim	No, dedicated product	Yes	Yes
Pack size	325 ml	300 ml	155 ml
Valve recession claim	Proven results	Yes, no test data	No

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Page 4 of 4 43806 WYNN'S PROFESSIONAL OCTANE BOOST  
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### Typical Characteristics

Appearance	Clear Thin Liquid
Density @ 15°C	0.871 (ASTM D 4052)
Colour (Visual)	Amber
Colour (ASTM D 1500)	2.5
Flash Point (°C) PMCC	70 (ASTM D 93)
Boiling Point (°C)	121-207
Volatiles (%Vol)	1.6

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